IN THE UNITED STATES DISTRICT COURT

FOR THE SOUTHERN DISTRICT OF ILLINOIS

NATIONAL WILDLIFE FEDERATION, AMERICAN RIVERS, PRAIRIE RIVERS NETWORK, MISSOURI COALITION FOR THE ENVIRONMENT, and GREAT RIVERS HABITAT ALLIANCE, Plaintiffs, vs. UNITED STATES ARMY CORPS OF ENGINEERS; LT. GENERAL TODD T. SEMONITE, Commanding General and Chief of Engineers, MAJOR GENERAL RICHARD M. TOY, Commander of the Mississippi Valley Division of the Army Corps of Engineers, Defendants.	CASE NO. **COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF**

I. INTRODUCTION

1. Plaintiffs NATIONAL WILDLIFE FEDERATION, AMERICAN RIVERS, PRAIRIE RIVERS NETWORK, MISSOURI COALITION FOR THE ENVIRONMENT, and GREAT RIVERS HABITAT ALLIANCE ("Plaintiffs") bring this action to protect the 195-mile Middle Mississippi River reach ("MMR") of the Mississippi River from further irreparable environmental harm and ecological collapse due to the Defendants' continued massive river channel construction, excavation, dredging, filling and bank hardening activities (the "Middle Mississippi River Regulating Works Project" or "Project") without compliance with applicable environmental laws. Defendant UNITED STATES ARMY CORPS OF ENGINEERS ("Corps") carries out these environmentally harmful activities, purportedly pursuant to its 2017 Regulating Works Project Final Supplemental Environmental Impact Statement ("Final SEIS" or "FSEIS"), in order to maintain a navigation channel at least nine feet deep and 300 feet wide in the Middle Mississippi River. Defendants are conducting the Project throughout the Middle Mississippi River, which is located between the Mississippi River's confluence with the Missouri River just north of St. Louis, and its confluence with the Ohio River at the southern tip of Illinois.

2. The Project involves both "regulating works" and "operations and maintenance" ("O&M") activities, all aimed at maintaining a nine-foot deep navigation channel. Regulating

works activities include construction and maintenance of river training structures such as dikes, weirs and chevrons, and placement of bank hardening works known as revetments. Operations and maintenance activities include dredging to control the route, depth, and flow rate of the river. Both regulating works and O&M activities are carried out by the Corps' St. Louis, Rock Island, and St. Paul Districts, ostensibly pursuant to the Corps' authority under the Rivers and Harbors Acts ("R&H Acts") and the Water Resources Development Acts ("WRDAs").

3. On August 31, 2017, the Corps issued a Record of Decision ("ROD") approving the recommendations in the Final SEIS. The Final SEIS and ROD adopted a Preferred Alternative (i.e., the Project) of continued construction of river training structures through at least 2034. Contrary to applicable law, however, the ROD and Final SEIS violate key environmental statutes and ignore indisputable data showing that river training structures such as those approved in the Preferred Alternative cause flooding and related environmental harm by narrowing the river channel. River training structures previously constructed by the Corps during the past several decades have already profoundly reconfigured the Middle Mississippi River to the detriment of its fish and wildlife. They have placed surrounding communities at greater risk of personal injury and property damage from increased flooding because they narrow, and thus constrain, the river's flow during high water events.

4. Despite the Project's growing environmental damage, its SEIS fails to acknowledge, let alone address, this harm. Instead, like its five previous Environmental Impact Statements ("EISs") on partial segments of the Project, four in the mid-1970s and one in 1997, it fails to evaluate the Project's cumulative effects because each considered only a small portion of the Project in isolation. The Corps has never issued an EIS addressing in one document the cumulative impacts of its many construction projects and ongoing O&M activities that comprise the Project.

5. The inadequacy of the existing EISs is compounded by the fact that the circumstances surrounding the Project, knowledge about the environmental harm it causes, and indeed the Project itself have all significantly changed since the 1970s. The National

Environmental Policy Act, 42 U.S.C. section 4321 et seq. ("NEPA") requires a robust, comprehensive Supplemental EIS in these circumstances. Yet the Corps mistakenly decided to prepare and adopt in 2017 an SEIS only for its "regulating works" activities – including construction of river training structures and other projects "to ensure adequate navigation and depth" – but not its O&M activities, nor its construction of revetment and other bank stabilization actions. U.S. Army Corps of Engineers, Regulating Works: Supplemental Environmental Impact Statement website, www.mvs.usace.army.mil/Missions/Navigation/SEIS.aspx.

6. Before adopting its regulating works SEIS in August 2017, on April 21, 2014, the Corps segmented its NEPA analysis by releasing separate Environmental Assessments ("EAs") and Findings of No Significant Impact ("FONSIs") for each of several new regulating works projects (collectively, "New Projects"). These New Projects include multiple rootless dikes, miles of bankline revetments, and twelve massive bendway weirs, and are analysed separately in the Monsenthein/Ivory Landing Final EA and FONSI, the Eliza Point/Greenfield Bend Final EA and FONSI, and the Dogtooth Bend Final EA and FONSI. These EAs tier off a now obsolete 1976 EIS. *See* Monsenthein/Ivory Landing Final EA and FONSI at 2-3;[1] Eliza Point/Greenfield Bend Final EA and FONSI at 2-3;[2] and Dogtooth Bend Final EA and FONSI at 2-3.[3] The EAs assert that they have "incorporated new information and circumstances relevant to the impacts of the action on the environment to the greatest extent possible." Monsenthein/Ivory Landing Final EA and FONSI at 3; Eliza Point/Greenfield Bend Final EA and FONSI at 3; Dogtooth Bend Final EA and FONSI at 3. But under NEPA, even if the EAs' assertion were true, that is not enough.

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[1] *Available at* http://www.mvs.usace.army.mil/Portals/54/docs/pm/Reports/EA/Mosenthein%20Ivory%20Landing%20Phase%204%20Final%20EA%20FONSI%20and%20Appendices.pdf.

[2] *Available at* http://www.mvs.usace.army.mil/Portals/54/docs/pm/Reports/EA/Eliza%20Point%20Greenfield%20Bend%20Phase%203%20Final%20EA%20FONSI%20and%20Appendices.pdf.

[3] *Available at* http://www.mvs.usace.army.mil/Portals/54/docs/pm/Reports/EA/Dogtooth%20Bend%20Phase%205%20Final%20EA%20FONSI%20and%20Appendices.pdf.

NEPA requires either that the EAs tier off a valid, complete SEIS, or that the Corps prepare an integrated, comprehensive EIS for the entire Middle Mississippi River Regulating Works Project.

7. Plaintiffs seek (1) a judgment declaring that Defendants' decision to proceed with new river training structures, revetment, and O&M activities without completing an adequate SEIS is arbitrary, capricious, an abuse of discretion or otherwise not in accordance with law; (2) an injunction ordering the Defendants to prepare an adequate SEIS that analyzes the Project as a whole, including both regulating works and O&M activities, their cumulative effects, and all reasonable alternatives that would reduce or avoid those effects; and (3) an injunction enjoining the Defendants from approving construction of new river training structures until an adequate SEIS is approved and compliance with all applicable environmental laws including the Water Resources Development Act's ("WRDA's") mitigation requirements set forth in 33 U.S.C. section 2283(d), the Fish and Wildlife Coordination Act ("FWCA"), 16 U.S.C. section 661 et seq., and the Rivers and Harbors ("R&H") Act of 1927 (ch. 47, 44 Stat. 1010), is achieved; (4) an award to plaintiffs of their reasonable attorneys' fees and costs and expenses as provided in the Equal Access to Justice Act, 28 U.S.C. section 2412; and (5) such other relief as this Court deems just and proper.

II. JURISDICTION AND VENUE

8. The Court has jurisdiction over this action under 28 U.S.C. sections 1331 (federal question), 1337 (regulation of commerce), 1346 (United States as defendant), 1361 (mandamus against an officer of the United States), 2201 (declaratory judgment), and 2202 (injunctive relief), and under the Administrative Procedure Act ("APA"), 5 U.S.C. sections 701-706 (to set aside unlawful agency action) because (1) the action arises under NEPA, the Water Resources Development Act's ("WRDA's") mitigation requirements set forth in 33 U.S.C. section 2283(d), the FWCA, 16 U.S.C. sections 661 and 662, the R&H Act of 1927 (ch. 47, 44 Stat. 1010), and the regulations implementing these laws; (2) the Corps is an agency of the United States government and the individual Defendants are sued in their official capacities as officers of the United States; (3) the action seeks a declaratory judgment; and (4) the lawsuit also seeks injunctive and

mandamus relief.

9. Venue is proper in this judicial district under 28 U.S.C. § 1391(e)(1)(A) and (e)(1)(C) because Defendant Corps and Plaintiff Prairie Rivers Network (and members of the other Plaintiffs) reside in this district within the meaning of 28 U.S.C. § 1391(c)(2). In addition, venue is proper under 28 U.S.C. § 1391(e)(1)(B) because "a substantial part of the events or omissions giving rise to the claim occurred" in this district.

10. Plaintiffs are not required to provide Defendants any written notice of intent to sue on claims arising under NEPA and the APA. Nonetheless, in an effort to avoid litigation, Plaintiffs including the National Wildlife Federation have (1) reached out to the Corps on numerous occasions to discuss the problems with the Corps' regulating works and O&M activities, (2) submitted detailed comments to the Corps on both its Draft SEIS and its Final SEIS, (3) requested that the Corps prepare an SEIS that addresses both regulating works and O&M activities, and (4) asked that it stop constructing new river training structures until that analysis is completed. But contrary to Plaintiffs' comments and requests, the SEIS covers only regulating works activities and not O&M activities, such as dredging, even though these activities and their effects are inextricably intertwined. O&M activities as well as regulating works activities have fundamentally reconfigured and degraded the flow and ecosystem of the Middle Mississippi River. Without analyzing the widespread and profound effects of O&M activities, the SEIS cannot provide a complete understanding of the Project.

11. There exists now between the parties an actual, justiciable controversy in which Plaintiffs are entitled to a declaration of their rights, a declaration of the Corps' obligations, and further relief because of the facts and circumstances hereinafter set forth.

12. Plaintiffs have standing to assert their claims, have exhausted all applicable remedies, and file this Complaint within all applicable statutes of limitations.

III. PARTIES

13. Plaintiff NATIONAL WILDLIFE FEDERATION (NWF) is the nation's largest member-supported non-profit conservation advocacy and education organization, working with

approximately six million members and supporters. NWF is organized under the laws of the District of Columbia and is headquartered in Reston, Virginia. It has field and regional offices throughout the United States and affiliate organizations in fifty-two states and territories, including the Mississippi River's watershed states of Minnesota, Wisconsin, Iowa, Illinois, Missouri, Kentucky, Arkansas, Tennessee, Mississippi, and Louisiana. NWF's mission is to inspire Americans to protect wildlife for our children's future. NWF promotes this purpose through numerous conservation programs that seek to restore habitats and ecosystems upon which people and wildlife depend, including the self-renewing processes of the nation's rivers. These processes include healthy headwaters sending clean water downstream, productive floodplains and wetlands that alleviate flooding and act as filters for pollutants that run off the land, and natural flow regimes that synchronize and sustain life in and along the nation's rivers. NWF works to restore rivers' natural functions so they will be better able to support the people and biological communities that depend on them. NWF takes an active role in monitoring legislation and the actions of federal agencies, including the U.S. Army Corps of Engineers, that affect watershed management. NWF works extensively on navigation, flood protection, and species and habitat protection issues on the Middle Mississippi River as well as the balance of the Mississippi River System.

14. NWF's members currently use and enjoy, and plan to continue to use and enjoy, the Middle Mississippi River as well as the balance of the Mississippi River System and associated floodplains and wetlands for health, recreation, scientific, economic, and aesthetic purposes. Members derive these benefits from fishing, hunting, boating, swimming, nature study, aesthetic enjoyment, wildlife observation, photography, and other water-based activities in and around the waters of that System. In addition, NWF members are vitally interested in preservation of the wildlife populations that are threatened by the Project. Many NWF members reside in the states that border the Mississippi River and its tributaries and are at risk from increased flooding. These interests of NWF's members are being adversely affected and irreparably injured by the Corps' approval and implementation of the Project without first

preparing an adequate SEIS as required by NEPA and complying with the other laws whose violation is alleged herein. NWF submitted scoping comments, draft SEIS comments, and Final SEIS comments on the Corps' SEIS for the Project, seeking correction of its scientific errors and omissions, and compliance with NEPA and the other environmental laws whose violation is alleged herein. A court order granting Plaintiffs relief will redress these injuries.

15. Plaintiff AMERICAN RIVERS is a national non-profit conservation organization headquartered in Washington, D.C. with more than 275,000 members, supporters and volunteers with offices across the country. Established in 1973 under its former name, the American Rivers Conservation Council, AMERICAN RIVERS combines national advocacy with field work in key river basins to deliver high quality, practical, problem-solving improvements in the management of rivers throughout the United States. Its three primary goals are to (1) protect wild rivers to safeguard our natural heritage, including 5,000 new miles of Wild and Scenic Rivers and 1,000,000 acres of riverside lands, (2) restore damaged rivers to improve flows, reconnect fish and wildlife habitat and improve public safety, with a specific goal of removing 400 hazardous and outdated dams, restoring 10,000 miles of rivers, and 1,000 acres of floodplains, and (3) conservation of clean water to ensure ample supplies for fish, wildlife, agriculture and communities, with a specific goal of reducing pollution in 100,000 miles of rivers and improving the availability of clean water for one-third of all Americans. AMERICAN RIVERS has members who use and enjoy the Middle Mississippi River as well as the balance of the Mississippi River System for recreation, scientific and aesthetic purposes. These members are being adversely affected and irreparably injured by the Corps' approval and implementation of the Project without compliance with NEPA and the other laws sought to be enforced by this lawsuit. AMERICAN RIVERS submitted scoping comments, draft SEIS comments, and Final SEIS comments on the Corps' SEIS for the Project, seeking correction of its scientific errors and omissions, and compliance with NEPA and the other environmental laws whose violation is alleged herein. A court order granting Plaintiffs relief will redress these injuries to AMERICAN RIVERS' members.

16. Plaintiff PRAIRIE RIVERS NETWORK ("PRN") is a not-for-profit corporation headquartered in Champaign, Illinois and a state affiliate of NWF dedicated to river protection, conservation, and restoration. PRN has members who reside throughout Illinois and are directly affected by the Project. Members are vitally interested in preservation of wildlife populations in the Middle Mississippi River as well as the balance of the Mississippi River System, many of which are threatened by the Project. In addition, PRN members work in the floodplain and are therefore at risk from increased flooding. The Project harms and will continue to harm the interests of PRN members. PRN submitted scoping comments, draft SEIS comments, and Final SEIS comments on the Corps' SEIS for the Project, seeking correction of its scientific errors and omissions, and compliance with NEPA and the other environmental laws whose violation is alleged herein. A court order granting Plaintiffs relief will redress these injuries to PRN's members.

17. Plaintiff MISSOURI COALITION FOR THE ENVIRONMENT ("MCE") is a non-profit community organization headquartered in St. Louis, Missouri that works to protect and restore the environment through education, public engagement, and legal action. MCE has members who reside throughout Missouri and are directly affected by the Project. MCE's members use the Project area for aesthetic, scientific, historic, cultural, recreational, and spiritual enjoyment. In addition, its members are vitally interested in preservation of the wildlife populations which are threatened by the Project. Finally, many MCE members live in the floodplain and are therefore at risk from increased flooding. The Project harms and will continue to harm the interests of MCE members. A court order granting Plaintiffs relief will redress these injuries to MCE's members.

18. Plaintiff GREAT RIVERS HABITAT ALLIANCE ("Great Rivers") is a non-profit membership organization headquartered in St. Louis, Missouri that is dedicated to protecting the historic, 100-year flood plain of the Middle Mississippi River and its major tributaries and the irreplaceable wildlife habitat and flood-water storage it provides. Great Rivers' members own, use and enjoy land within the flood plain, and lands affected by flood management, of the

Mississippi River and its major tributaries, and regularly use the flood plain for recreation, aesthetic enjoyment, waterfowl hunting, and other purposes. For years, Great Rivers and its members have worked to preserve and protect the flood plain, and to reduce the negative environmental impacts of floodway management by the Corps, including the Project. Great Rivers and its members are directly affected by the Project because they use the Project area for aesthetic, scientific, historic, cultural, recreational, and spiritual enjoyment. Great Rivers' members are vitally interested in preserving the wildlife populations which are threatened by the Project. The Project harms and will continue to harm the interests of Great Rivers' members. Great Rivers submitted comments on the Corps' Final SEIS for the Project, seeking correction of its scientific errors and omissions, and compliance with NEPA and the other environmental laws whose violation is alleged herein. A court order granting Plaintiffs relief will address these injuries to Great Rivers' members.

19. Plaintiffs' injuries are fairly traceable to the Corps' actions. The Project harms Plaintiffs' use of the Middle Mississippi River and its watershed for aesthetic, scientific, recreational, and spiritual enjoyment because it causes widespread habitat destruction, water quality degradation, floodplain disruption and diminution, and increased flooding. The Project adversely affects numerous wildlife populations, including threatened and endangered species. These injuries are actual, concrete, and imminent. Plaintiffs have no plain, speedy, or adequate remedy at law.

20. Defendant LT. GENERAL TODD T. SEMONITE is the Chief of Engineers and Commanding General of the U.S. Army Corps of Engineers and is sued herein in his official capacity. He is charged with the supervision and management of all Corps decisions and actions, including the Project.

21. Defendant MAJOR GENERAL RICHARD M. TOY is the Commander of the Mississippi Valley Division of the U.S. Army Corps of Engineers and is sued herein in his official capacity. He is charged with the supervision and management of all Mississippi Valley Division decisions and actions, including the Project.

22. Defendant UNITED STATES ARMY CORPS OF ENGINEERS ("Corps") is an agency of the federal government. The Corps has the primary authority for construction and maintenance of federal navigation and flood control projects throughout the nation, including the Project.

IV. LEGAL BACKGROUND

A. National Environmental Policy Act

23. The National Environmental Policy Act of 1969, 42 U.S.C. § 4321 et seq., is the basic national charter for environmental protection. Title II of NEPA establishes the Council on Environmental Quality ("CEQ"), 42 U.S.C. § 4342, which is charged with ensuring that federal agencies implement NEPA. 42 U.S.C. § 4344. Accordingly, the CEQ publishes regulations prescribing procedures for NEPA compliance. *See* 40 C.F.R. §§ 1500.1-1508.28 ("CEQ regulations"). The CEQ regulations are mandatory and binding on all federal agencies, including Defendants. 40 C.F.R. § 1500.3.

24. NEPA requires all federal agencies to prepare an environmental impact statement ("EIS") for all "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). An EIS must describe all direct, indirect, and cumulative environmental impacts of the proposed action, any adverse and unavoidable effects, and alternatives to that action, as well as respond to public comments. *Id.*; 40 C.F.R. §§ 1502.9, 1508.8(b).

25. An EIS must also "state how alternatives considered in it and decisions based on it will or will not achieve" the policy goals set forth in sections 101 and 102(1) of NEPA, and other environmental laws and policies. 40 C.F.R. § 1502.2(d). The policy goals of NEPA include a continuing responsibility on the part of the federal government to use all practicable means to:

(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

(2) assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings; [and]

(3) attain the widest range of beneficial uses of the environment without degradation, risk to . . . health or safety, or other undesirable and unintended consequences . . . .

42 U.S.C. § 4331(b).

26. An EIS is "more than a disclosure document." 40 C.F.R. § 1502.1. It is intended to be "action-forcing," ensuring that the government carefully considers the environmental consequences of its actions and makes informed decisions that "minimize adverse [environmental] impacts" and "enhance the quality of the human environment." *Id.* The EIS "shall be prepared early enough so that it can serve practically as an important contribution to the decision-making process and will not be used to rationalize or justify decisions already made." 40 C.F.R. § 1502.5.

27. An agency's NEPA obligations continue even after an EIS is finalized. CEQ regulations and the Corps' NEPA regulations provide that the agency must continue to evaluate potential environmental impacts of its projects and must prepare a supplemental EIS ("SEIS") whenever:

(i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or

(ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

40 C.F.R. § 1502.9(c); 33 C.F.R. § 230.13(b). Where, as here – with the Corps' EISs prepared in the 1970s and in 1997 – an EIS is "more than 5 years old," it should be "carefully re-examined" to determine if a supplement is required. 46 Fed. Reg. 18026 (Mar. 23, 1981), as amended 51 Fed. Reg. 15618 (Apr. 25, 1986), Question 32. Supplemental EISs are critical to fulfilling NEPA's purpose "because '[t]he entire efficacy of the EIS process is called into question when changes are made to a project after the publication of a final impact statement." *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 371 n. 14 (1989), quoting from Andreen, "In Pursuit of NEPA's Promise: The Role of Executive Oversight in the Implementation of Environmental Policy," 64 Indiana L.J. 205, 247-248 (1989).

28. In *Marsh*, the Supreme Court stated that "the decision whether to prepare a supplemental EIS is similar to the decision whether to prepare an EIS in the first instance: if there remains 'major Federal actio[n]' to occur, and if the new information is sufficient to show that the remaining action will 'affec[t] the quality of the human environment' in a significant manner or to a significant extent not already considered, a supplemental EIS *must* be prepared." 490 U.S. at 374, quoting from 42 U.S.C. § 4332(2)(C) (emphasis added). New information is significant enough to require an SEIS if it "'presents a seriously different picture of the environmental impact of the proposed project from what was previously envisioned.'" *Louisiana Wildlife Fed'n v. York*, 761 F.2d 1044, 1051 (5th Cir. 1985), quoting from *Wisconsin v. Weinberger*, 745 F.2d 412, 421 (7th Cir. 1984).

29. Just as an agency must take a "hard look" at the direct, indirect and cumulative effects of proposed major federal action when preparing an initial EIS, so too when deciding whether to prepare a supplemental EIS, the agency must "take a hard look" at any evidence that becomes available after the original EIS is prepared. *Marsh*, 490 U.S. at 385. "An agency has met its 'hard look' requirement if it has 'examine[d] the relevant data and articulate[d] a satisfactory explanation for its action including a rational connection between the facts found and the choice made.'" *Sierra Club v. United States Army Corps of Engineers*, 295 F.3d 1209, 1216 (11th Cir. 2002), quoting from *Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). If an agency "fail[s] entirely to consider an important aspect of the problem," it has not taken the requisite hard look. *Id.*

30. Under certain circumstances, agencies may "tier" environmental impact statements off of one another. "Tiering refers to the coverage of general matters in broader environmental impact statements . . . with subsequent narrower statements . . . incorporating by reference the general discussions and concentrating solely on the issues specific to the" new project. 40 C.F.R. § 1508.28. Tiering "is appropriate when the sequence of statements or analyses is:

(a) From a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis.

(b) From an environmental impact statement on a specific action at an early stage (such as need and site selection) to a supplement (which is preferred) or a subsequent statement or analysis at a later stage (such as environmental mitigation). Tiering in such cases is appropriate when it helps the lead agency to focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe."

Id.

31. Tiering is inappropriate, however, when there has been "a material change in circumstances or a departure from the policy covered in the overall EIS." *Minnesota Public Interest Research Group v. Butz* ("*Minnesota PIRG*"), 498 F.2d 1314, 1323 n. 29 (8th Cir. 1974) (emphasis added); *Association of Public Agency Customers, Inc. v. Bonneville Power Administration* ("*APAC*"), 126 F.3d 1158, 1184 (9th Cir. 1997) ("significant circumstantial change requires a new or supplemental EIS" instead of merely tiering to a prior "programmatic EIS")); *Salmon River Concerned Citizens v. Robertson* ("*Salmon River*"), 32 F.3d 1346, 1356 (9th Cir. 1994) ("A comprehensive programmatic impact statement generally obviates the need for a subsequent site-specific or project-specific impact statement, unless *new and significant environmental impacts arise* that were not previously considered" (emphasis added)). Under those circumstances, "an individual EIS for each [subsidiary project] would . . . be required." *Minnesota PIRG*, 498 F.2d at 1323 n. 29.

32. In 1978, the CEQ promulgated regulations for implementing NEPA, which were revised in 1984. 40 C.F.R. § 1500 et seq. The Corps promulgated its own regulations for implementing NEPA in 1988. 33 C.F.R. § 230. The CEQ regulations require that the Corps analyze the cumulative impacts of its activities. 40 C.F.R. §§ 1508.25, 1508.27. They also require the Corps to analyze mitigation for unavoidable environmental impacts of its activities. 40 C.F.R. §§ 1502.14, 1502.16, 1508.20. Both the CEQ regulations and the Corps' regulations require the implementation of mitigation measures adopted in a Record of Decision, and require the monitoring of mitigation efforts to ensure that mitigation is properly implemented. 40 C.F.R. §§ 1505.2, 1505.3; 33 C.F.R. § 230.15.

B. Fish and Wildlife Coordination Act

33. The Fish and Wildlife Coordination Act ("FWCA"), 16 U.S.C. section 661 et seq., applies to all water resources projects and requires the Corps to consult with the U.S. Fish and Wildlife Service before approving and implementing such projects. It directs in pertinent part that:

(1) "[W]ildlife conservation shall receive equal consideration and be coordinated with other features of water-resource development programs . . . ." 16 U.S.C. § 661.

(2) Consultation shall be carried out for "the purpose of determining the possible damage to wildlife resources and for the purpose of determining means and measures that should be adopted to prevent the loss of or damage to such wildlife resources, as well as to provide concurrently for the development and improvement of such resources." 16 U.S.C. § 662(b).

(3) Recommendations arising from consultation "shall be made an integral part of any report prepared or submitted by any agency of the Federal Government." 16 U.S.C. § 662(b).

34. The Corps contends that the Project is exempt from this formal consultation requirement under the following provision of section 662 exempting

> "any project or unit thereof authorized before the date of enactment of the Fish and Wildlife Coordination Act [in 1958] if the construction of the particular project or unit thereof has been substantially completed. A project or unit thereof shall be considered to be substantially completed when sixty percent or more of the estimated construction cost has been obligated for expenditure."

16 U.S.C. § 662(g).

35. The Corps' 2017 FSEIS claims that this exemption applies to the Project based on cost expenditures as of 1958. However, the FWCA, the Corps' own engineering regulations, and the U.S. Fish and Wildlife Service FWCA Handbook all make clear that the section 662(g) exemption does not apply when significant changes are made to the project after 1958, as is the

case here.

36. The FWCA states that the formal FWCA consultation report:

> "shall be made an integral part of any report prepared or submitted by any agency of the Federal Government responsible for engineering surveys and construction of such projects when such reports are presented to the Congress or to any agency or person having the authority or the power, by administrative action or otherwise, (1) to authorize the construction of water-resource development projects or (2) to approve a report on the *modification or supplementation of plans for previously authorized projects, to which sections 661 to 666c of this title apply.*"

16 U.S.C. § 662(b) (emphasis added).

37. The Corps' engineering regulations likewise require formal FWCA consultation for post-authorization activities that modify or supplement a previously authorized plan:

> "(1) FWCA Applicability. *The FWCA applies to post-authorization activities if the* activity meets the threshold test outlined in Section 2(a) of the FWCA, i.e., the *authorized plan* is *modified or supplemented*, and these changes relate to Federal construction which would divert, modify, impound, or otherwise control a waterway.
>
> (2) Section 2(b) Report and Section 2(e) Funding. Sections 2(b) and (e) of the FWCA normally apply during post-authorization activities for Federal projects where the Section 2(a) threshold test has been met.
>
> (a) Mandatory Compliance. Section 2(b) of the FWCA is mandatory when changes to the authorized plan meet the Section 2(a) threshold test and the proposed changes to the authorized plan or project require a report to Congress, or the approval of the Chief of Engineers, or both."

Corps' Engineering Regulations ("ER") 1105-2-100 (April 22, 2000) at C-22 (emphasis added).[4] The "Discretionary Compliance Determination Criteria" established in the Corps' Engineering Regulations also clearly apply to the Regulating Works Project FSEIS such that formal FWCA consultation is required. *See* ER 1105-2-100 at C-22 to C-23.

38. The U.S. Fish and Wildlife Service's FWCA Handbook likewise states:

> "The only class of projects exempted from the provisions of Section 2 of the FWCA, then, are those on which project construction was 60 percent or more completed (based on obligation of estimated construction costs) on August 12, 1958. *Projects that are later modified or supplemented thus fall under the provisions of Section 2 of the FWCA, even if the original project modified or supplemented was more than 60 percent constructed at the time of enactment of the FWCA*."[5]

39. The Regulating Works Project authorized in 1927 was substantially modified in 1934, 1965, and 1974. For purposes of the FWCA, the relevant changes are those after 1958:

(1) In 1965, the Corps determined it was required to maintain the navigation channel year round. Prior to 1965, the Corps had not been required to maintain navigation from mid-December to mid-February, when the lowest flows typically occurred.

(2) In 1974, the Corps adopted a plan to contract the channel width between the riverside toe of a river training structure and the opposite bank or opposite riverside toe of a river training structure to 1500 feet upon the recommendation of the District Engineer. At the same time, "because of the shift from pile dikes to

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[4] The "Section 2(a) threshold test" referred to in these regulations would appear to refer to 16 U.S.C. § 662(a), which states in pertinent part that formal consultation is required: "whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States . . . ." 16 U.S.C. § 662(a).

[5] U.S. Fish and Wildlife Service, Water Resources Development Under the Fish and Wildlife Coordination Act (November 2004) at I-38 (https://www.fws.gov/ecological-services/es-library/pdfs/fwca.pdf, visited January 17, 2017 (emphasis added).

> stone dikes as well as the increase in linear feet of dike and revetment work . . . during the 1960's and early 1970's, . . . *the estimated percentage completion of the Regulating Works Project was reduced below 60% to 48% in the 1973 Chief of Engineers Annual Report."*

FSEIS, Appendix K-11 – K-15 (emphasis added).

40. The FSEIS proposes to continue to implement the unauthorized 1,500-foot contraction plan. But as discussed below, Congress had previously, and expressly, rejected the more aggressive 1,800-foot and 1,500-foot contraction plans when it authorized the original Regulating Works Project in 1927, in recognition of the significant adverse ecological impacts that would result from those plans.[6]

C. Rivers and Harbors Act Authorizing Legislation

41. The Corps' authority to construct and operate a project is limited by the project's specific authorizing legislation, which typically adopts the recommendations (and any limitations) set forth in the project's Chief of Engineers Report. The Regulating Works Project was authorized by the Rivers and Harbors Act of 1927 (ch. 47, 44 Stats. 1010), which authorized construction of the project *as recommended in the 1926 Chief of Engineers Report*.

42. The 1926 Chief of Engineers Report[7] established the following explicit limitations on the Regulating Works Project:

> (1) Constriction of the channel through regulating works and revetment is limited to a conservative width of 2,500 to 2,000 feet at low water, as follows: 2,250 foot contraction at low water from River des Peres to Grays Point; 2,500 foot contraction at low water from Commerce to Commercial Point, and 2,000 foot contraction at low water from Commercial Point to Ohio River;[8] and

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[6] 1926 Chief of Engineers Report – December 17, 1926 (69th Congress, 2d Session, Doc. No. 9) ("1926 Chief's Report") at paragraph 57.

[7] Rivers and Harbors Act of 1927; 1926 Chief's Report at paragraphs 55-57, 80, 84).

[8] 1926 Chief's Report. As noted above, the contraction width is measured from the riverside toe

(2) That after completion of regulating works, dredging be continued, as needed, to maintain a channel 9 feet deep and 300 feet wide with requisite increased width at bends: *Provided*, That dredging of channels deeper than 8 feet and wider than 200 feet be authorized only when the needs of navigation then existing are not adequately met by such 8-foot channel.[9]

43. The 1926 Chief's Report explicitly rejected more aggressive (i.e., even narrower) contractions of the river:

> "The contraction to be brought about by the regulating work proposed is a conservative one. The practical result of these works will be merely narrowing the abnormally wide sections of the river to the present mean widths. The project of 1881 contemplated contraction to a width of about 2,500 feet. Through St. Louis Harbor a contraction to a low-water width of 1,500 feet to 1,800 feet has been carried out. The contraction proposed causes much less change in the original condition of the river than either the project of 1881 or the work in St. Louis Harbor. *Calling for very little change from the original condition of the river, the equilibrium of natural forces in the river will be but slightly disturbed."*[10]

44. As a result, Congress established very specific limits on the Regulating Works Project – once the river was contracted to a width of 2,000 to 2,500 feet (depending on location), the Corps was to maintain the navigation channel only through dredging as needed. Congress also expressly rejected more aggressive contraction plans. Despite these explicit limitations, since 1934 the Corps has frequently deviated from Congress' direction by implementing an unauthorized and more damaging contraction of 1,800 feet. Since 1974, the Corps has frequently implemented an even more damaging contraction of 1,500 feet upon the unauthorized

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of a river training structure on one side of the river to the bank or riverside toe of another river training structure on the opposite side of the river.

[9] *Id.*

[10] 1926 Chief's Report at paragraph 57 (emphasis added).

recommendation of the District Engineer.

45. The Corps' unauthorized, more aggressive 1,500 foot contraction has resulted in significant additional environmental harm and flood stage increases than would have occurred under the plan authorized by Congress. The Corps' approval of the Project continues this unauthorized contraction at least through 2034. Plaintiffs bring this action in part to secure this Court's judgment declaring that the Corps' approval of the Project in August 2017 violates the express limitations that Congress had placed on the permissible narrowing of the Mississippi River.

D. Water Resources Development Act

46. The Water Resources Development Act, as amended (33 U.S.C. 2283) requires the Corps to mitigate the adverse impacts to ecological resources including fish and wildlife of any water resources project authorized by the Secretary of the Army and for which construction commenced after November 17, 1986, unless the Secretary determines that the project "will have negligible adverse impact on ecological resources and fish and wildlife without the implementation of mitigation measures." 33 U.S.C. §§ 2283(a)(1), 2283(d)(1). After November 17, 1986, the Corps "shall not select a project alternative in any report, unless such report contains (A) a recommendation with a specific plan to mitigate for damages to ecological resources, including terrestrial and aquatic resources, and fish and wildlife losses created by such project, or (B) a determination by the Secretary [of the Army] that such project will have negligible adverse impact on ecological resources and fish and wildlife without the implementation of mitigation measures." 33 U.S.C. § 2283(d)(1).

47. Because the Corps has issued a "report" — the Draft and Final SEISs – on the Project, and the Secretary of the Army has not found that the Project will have only "negligible adverse impact on ecological resources and fish and wildlife without the implementation of mitigation measures," the Corps is required to mitigate the Project's adverse impacts on those "ecological resources and fish and wildlife." *Id.*

48. The Corps' mitigation plans must ensure that "impacts to bottomland hardwood

forests are mitigated in-kind and harm to other habitat types are mitigated to not less than in-kind conditions, to the extent possible." 33 U.S.C. § 2283(d)(1). The Corps "shall select and design mitigation projects using a watershed approach to reflect contemporary understanding of the science of mitigating the adverse environmental impacts of water resources projects." 33 U.S.C. § 2283(d)(2).

49. Mitigation plans "shall include, at a minimum:"

(i) "a plan for monitoring the implementation and ecological success of each mitigation measure;"

(ii) "the criteria for ecological success by which the mitigation will be evaluated and determined to be successful based on replacement of lost functions and values of the habitat, including hydrologic and vegetative characteristics;"

(iii) "for projects where mitigation will be carried out by the Secretary . . . a description of the land and interest in land to be acquired for the mitigation plan; [and] the basis for a determination that the land and interests are available for acquisition . . . ;"

(iv) "for projects where mitigation will be carried out through a third party mitigation arrangement . . . a description of the third party mitigation instrument to be used; and [] the basis for a determination that the mitigation instrument can meet the mitigation requirements for the project;"

(v) "a description of . . . the types and amount of restoration activities to be conducted; [] the physical action to be undertaken to achieve the mitigation objectives within the watershed in which such losses occur . . . ; and [] the functions and values that will result from the mitigation plan; and

(vi) "a contingency plan for taking corrective actions in cases in which monitoring demonstrates that mitigation measures are not achieving ecological success in accordance with the criteria under clause (ii)."

33 U.S.C. § 2283(d)(3)(B).

50. The Corps' mitigation plans must also comply with "the mitigation standards and policies established pursuant to the regulatory programs administered" by the Corps. 33 U.S.C. § 2283(d)(3)(A).

51. The Corps is also required to consult yearly on each water resources project with the appropriate Federal agencies and the states on the status of the mitigation efforts. 33 U.S.C. § 2283(d)(4)(B). The consultation must address the status of ecological success on the date of the consultation, the likelihood that the ecological success criteria will be met, the projected timeline for achieving that success, and any recommendations for improving the likelihood of success. *Id.*

52. In addition, mitigation lands for Corps civil works projects must be purchased before any construction begins. 33 U.S.C. § 2283(a)(1). Any physical construction required for purposes of mitigation should also be undertaken prior to project construction but must, at the latest, be undertaken "concurrently with the physical construction of such project." *Id.*

E. Administrative Procedure Act

53. The Administrative Procedure Act ("APA") provides for judicial review of agency actions. 5 U.S.C. § 702. The APA requires that a reviewing court set aside and hold unlawful agency actions that are, among other things, "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706. The reviewing court must also "compel agency action unlawfully withheld or unreasonably delayed." *Id.* The APA allows judicial review of agency action unless the substantive statute at issue expressly precludes judicial review (or unless the substantive statute includes an express citizen suit provision). 5 U.S.C. § 701(a).[11]

54. The APA gives this Court jurisdiction over Plaintiffs' challenges to the Corps' compliance with NEPA, the FWCA and the WRDA's mitigation requirements, and to the Corps' failure to adhere to the authorized project purposes and limits under the R&H Act of 1927.[12]

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[11] *Heckler v. Chaney*, 470 U.S. 821, 830 (1985).
[12] *See, e.g., Public Citizen v. United States Trade Representative*, 5 F.3d 549, 551 (D.C. Cir. 1993); *Sierra Club v. Penfold*, 857 F.2d 1307, 1315 (9th Cir. 1988); *Environmental Defense Fund v. TVA*, 468 F.2d 1164, 1171 (6th Cir. 1972).

V. HISTORICAL AND FACTUAL BACKGROUND

55. The Mississippi River watershed drains 1,245,000 square miles – approximately one-third of the continental United States – including all or parts of thirty-two states and two Canadian provinces. The Upper Mississippi River System ("UMRS"), which includes the Middle Mississippi River and the portion of the Mississippi River upstream of its confluence with the Missouri River, as well as portions of the Illinois, Kaskaskia, Minnesota, St. Croix, and Black Rivers, is a vital national resource with important uses for agriculture, industry, recreation and wildlife. It supports hundreds of thousands of acres of bottomland forest, wetlands, and aquatic habitats, and "more than 300 species of birds, 57 species of mammals, 45 species of amphibians and reptiles, 150 species of fish, and nearly 50 species of mussels." Final Integrated Feasibility Report and Programmatic Environmental Impact Statement for the UMR-IWW System Navigation Feasibility Study (2004) at ii. The Mississippi River Valley is a major bird migration corridor; nearly half of North America's migratory waterfowl and shorebirds depend upon it for seasonal or year-round habitat. *Id.* Recreational opportunities in and around the rivers draw millions of visitors each year. The rivers supply water to nearby cities, agricultural areas, and industries. They also provide a commercial channel, carrying millions of tons of waterborne commerce each year, including fifty percent of the nation's corn and nearly half its soybean exports in 2002. *Id.*

56. A series of Rivers and Harbors Acts beginning in 1824 tasked the Corps with improving navigation in the rivers of the UMRS. Before the nation developed a sophisticated road and rail network, the rivers were even more important than they are today for moving timber, coal, cotton, and other agricultural products down the river and to the port of New Orleans, the gateway to international markets. Originally, the Corps' projects consisted of removing snags, sandbars, and other obstacles from the rivers. In the 1830s, the Corps began dredging and building wing dikes, which were originally constructed of long piles of willows (and are now built with large boulders) extending from one riverbank into the river at an angle perpendicular to the water flow. Wing dikes were the first example of river training structures, which can reduce

the need for dredging by controlling the shape of the river and directing the water flow into the navigation channel, where the concentrated flow and suspended sediment scour the soil and sand of the river bottom and deepen the channel. In 1880, lock and dam construction began.

57. The Rivers and Harbors Act of 1927 authorized the Regulating Works Project. Act of January 21, 1927, ch. 47, 44 Stat. 1010. Congress based its authorization on the 1926 Chief's Report,[13] which as noted established explicit limitations on the project's width. Congress has never authorized the Corps to violate these limitations.[14]

58. The Corps' unauthorized deviation from Congress' express limitation on the width of contraction and frequent implementation of a 1,500 foot contraction has resulted in significant additional environmental harm and flood stage increases.

59. The Rivers and Harbors Act of 1930 (ch. 847, Stats. 1930; P.L. 71-520) authorized the Corps to maintain a navigation channel nine feet deep and 400 feet wide. Construction in the UMRS accelerated, and in the 1930s alone the Corps added twenty-three dams to the existing three on the Mississippi River.

60. As Congress began to recognize the adverse impacts of these burgeoning "river training" projects on the environment, a series of Water Resources Development Acts ("WRDAs") authorized additional projects aimed at *reversing* the harm done to the environment. For example, the 1986 WRDA (P.L. 99-662) authorized the Corps' Environmental Management Program to restore and improve the ecological condition of the UMRS. The 1990 WRDA (P.L. 101-640) directed the Corps to prioritize environmental protection as one of its primary goals in

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[13] 1926 Chief's Report at paragraphs 55-57, 80, 84.

[14] While Congress can ratify an otherwise unauthorized agency action through appropriations acts, the "appropriation must plainly show a purpose to bestow the precise authority which is claimed." *Schism v. United States*, 316 F.3d 1259, 1289 (Fed. Cir. 2002); *Fund for Animals v. United States Bureau of Land Management ("Fund for Animals")*, 450 F.3d 13, 19 n. 7 (D.C .Cir. 2006). In other words the appropriations act must "clearly identify[] the action to be ratified." *Fund for Animals*, 46 F.3d at 19 n.7. Thus, to ratify the alternate contraction plans, Congress would have had to have been formally informed of the change in the plan, and would have had to clearly state in an appropriations act that it was approving the alternate plan. Plaintiffs are not aware of any such notification to Congress or any such Congressional approval.

all water resources projects. The 2007 WRDA (P.L. 110-114) authorized the Corps to carry out additional extensive restoration projects to improve the health of the UMRS. However, to date no projects have been carried out under the 2007 WRDA authorization.

61. The Corps issued four EISs for the Regulating Works Project between 1974 and 1976. Each was prepared by one of the Corps' district offices (St. Louis, Rock Island, or St. Paul), and therefore addressed only the part of the Project that was located in that district's own geographical area.

62. In 1997, the Corps' St. Paul District issued another EIS, but that EIS only addressed maintenance activities (and none of the operations or regulating works activities) conducted in the St. Paul District. The vast majority of the river training structures are located not in the St. Paul District, but further south in the Rock Island and St. Louis districts. In addition, more than half of the Mississippi River locks and dams are located in the Rock Island and St. Louis districts. The 1997 EIS did not analyze how the Corps' activities in the St. Paul District might interact with those in the other districts, and the EIS itself acknowledged this shortcoming: "The major *unresolved* issue is the *cumulative* impacts of the continued operations and maintenance of the 9-foot navigation channel project." 1997 EIS at 1-4 (emphasis added).

63. Despite the Corps' failure to ever address this "major unresolved issue" in an EIS for the Project, and despite the significant environmental and project changes that have occurred since 1997, let alone since the mid-1970s, the Corps has yet to prepare or even plan additional EISs addressing the Project's O&M activities. To Plaintiffs' knowledge, the Corps has prepared only two new EISs. Neither analyzes the Project's O&M activities, their impacts, and alternatives or mitigation measures that would avoid or reduce them. The first EIS is the Corps' 2004 EIS on its Navigation and Ecosystem Sustainability Project for the UMRS, which separately compared in summary manner several lock expansion and other measures to accommodate increased boat traffic and reduce boat traffic congestion, and several broad categories of possible restoration measures over a 50-year planning horizon. *See, e.g.,* www.mvs.usace.army.mil/Portals/48/docs/Nav/NESP/Main_Report_Final.pdf?ver=2017-06-20-

173431-180 at pp, 435-462 and 463-471. The 2004 EIS failed to examine the cumulative effects of O&M activities, presenting instead a four-paragraph "general overview of maintenance dredging activities and their respective role as ecological stressors," a single table showing net arithmetic changes in acreage or lineal feet of certain river features between 1930 and 1973 (or some other years), and one paragraph stating that "newer structures such as bendway weirs [and] chevron dikes . . . are being studied to assess their effectiveness . . . and . . . habitat value . . . ." *See, e.g., id.* at pp. 363, 383 and 358, respectively. The second EIS is the Corps' 2017 SEIS whose adequacy is challenged in this action. The Corps excluded from the latter SEIS all O&M activities, including dredging, and did not consider the cumulative impacts of other navigation related activities on these O&M activities such as water level and flow control through operation of upstream locks and dams.

VI. CURRENT PROJECT ACTIVITIES

64. Construction, operations, and maintenance activities for the Corps' Regulating Works Project continue to this day, but the Project looks much different than it did thirty or even fifteen years ago, with different types of structures and far more of them. For example, the Corps has developed several new river training structures that have different impacts on river flow, water levels, shoreline erosion and fish and wildlife habitat. Bendway weirs, which the Corps began building in 1990, are placed under water on the outside of a river bend, angled upstream. They direct water toward the inside of the bend, which prevents the navigation channel from migrating outward. After 2000, the Corps began using chevrons, which are arch-shaped dikes positioned away from the river banks, with the curve of the arch pointed upstream. Chevrons split the flow of the river, scouring the main channel and providing a secondary channel on the other side of the chevron near the riverbank. Rootless dikes, which are not attached to the streambank, have also been installed. The original EISs did not consider the effects of these structures because they had not yet been invented.

65. During the past three decades, the Corps has added hundreds of structures to the UMRS, including these newly designed ones. Plaintiffs are informed that between 1980 and

2009, the Corps built at least 380 new river training structures in the Middle Mississippi River, including 40,000 feet of wing dikes and bendway weirs between 1990 and 1993. The Corps also built at least twenty-three chevrons in the Middle Mississippi River between 2003 and 2010. The Corps continues to operate and maintain locks and dams throughout the UMRS, continues to dredge the river and dispose of those dredged materials, and continues to place revetment on the river's banks. In October 1989 the new Melvin Price Dam with a 1,200-foot lock became operational. The opening of the second 600-foot lock at the facility followed in June 1994.

66. As noted, in April, 2014, the Corps approved EAs and FONSIs for three new projects: the Monsenthein/Ivory Landing Regulating Works Project, the Eliza Point/Greenfield Bend Regulating Works Project, and the Dogtooth Bend Regulating Works Project ("New Projects"). These New Projects involve constructing multiple rootless dikes, miles of bankline revetments, and twelve bendway weirs. Monsenthein/Ivory Landing Final EA and FONSI at 5; Eliza Point/Greenfield Bend Final EA and FONSI at 5; Dogtooth Bend Final EA and FONSI at 5. None of these structures was examined in any previous EIS. The Corps has prepared EAs and FONSIs on other similar regulating works projects for which no EIS was prepared.

67. The EAs for the three New Projects state they tier off the 1976 EIS. Monsenthein/Ivory Landing Final EA and FONSI at 2-3; Eliza Point/Greenfield Bend Final EA and FONSI at 2-3; Dogtooth Bend Final EA and FONSI at 2-3. However, the 1976 EIS cannot serve as the basis for tiering because, as the Corps concedes, it requires supplementation, in the form of an SEIS, due to "significant new circumstances and information on the potential impacts of the Regulating Works Project on the resources, ecosystem, and human environment [that] warrant the preparation of" an SEIS. Monsenthein/Ivory Landing Final EA and FONSI at 2; Eliza Point/Greenfield Bend Final EA and FONSI at 2; Dogtooth Bend Final EA and FONSI at 2. *See, e.g.*, *Minnesota PIRG*, 498 F.2d at 1323 n. 29 ("an individual EIS for each" specific project is "required" where, as here, there is a "material change in circumstances or a departure from the policy covered in the overall EIS"); *APAC*, 126 F.3d at 1184 ("significant circumstantial change is the triggering factor requiring a new or supplemental EIS"); *Salmon River*, 32 F.3d at 1356 ("A

comprehensive programmatic impact statement generally obviates the need for a subsequent site-specific or project-specific impact statement, unless new and significant environmental impacts arise that were not previously considered.").

VII. CURRENT ECOLOGICAL CONDITIONS, SCIENTIFIC ADVANCES, AND KNOWLEDGE ABOUT THE PROJECT'S EFFECTS

68. Not only the Regulating Works Project itself, but also the circumstances surrounding it and the state of scientific knowledge about its effects, have changed substantially since the original EISs were prepared in the 1970s. Since 1986, the Corps, along with the U.S. Fish and Wildlife Service, U.S. Geological Survey, U.S. Environmental Protection Agency, and five states of the UMRS region, have been monitoring the rivers' ecological health through the Long Term Resource Monitoring Program ("LTRMP"). The LTRMP "has developed one of the most extensive and comprehensive data sets on any large river system in the world." Long Term Resource Monitoring Program, Status and Trends of Selected Resources of the Upper Mississippi River System, 2008 ("2008 Report") at 9. Data from the LTRMP have been examined in at least 324 technical reports, sixty-five peer-reviewed publications, and publicly available management tools and models. *Id*. at 17. The LTRMP continues to provide vital new information regarding the effects of the Project on the health of the UMRS.

69. Two reports prepared by the LTRMP — the 1999 Report and the 2008 Report -- identify the Regulating Works Project as a major factor negatively affecting the health of the UMRS. The 2008 Report states that the Project's activities are a "stressor" and "heavily influence" the condition of the UMRS, which is ecologically impaired in "all parts of the system." 2008 Report at 3, 9, 14, 19, 43. The 1999 Report identifies the Project as a major and sometimes "chief" reason that all six ecological health indicators are in an "impacted" or "degraded" state. Ecological Status and Trends of the [UMRS] 1998, 1999 ("1999 Report") at 16-2, 16-6, 16-8, 16-10, 16-11. In a 1997 report to Congress, the Corps acknowledged that "conditions at even the most healthy sites within the [UMRS] are at least partially artificial, non-sustainable, and in a

recognized state of degradation." Rock Island District, U.S. Army Corps of Engineers, Report to Congress, An Evaluation of the Upper Mississippi River System Environmental Management Program (Dec. 1997) at 2-3. In 2016, the Corps advised Congress that "habitat within the Upper Mississippi River is degrading at a rate of one to three percent annually. At these rates, the ecosystem is declining one to four times faster than currently [sic] restoration efforts." 2016 Report to Congress, Upper Mississippi River Restoration Program (USACE, Rock Island District) at 18.

70. The 1999 Report also highlights the extent to which newly available scientific information continues to increase understanding of how different river training structures and O&M activities interact with each other and with the hydrological processes in the river. *See, e.g.*, Report at 16-6 (data are "now beginning to reveal" how much habitat fish species need); 16-10 ("a growing body of ecological information indicates how important . . . annual flood zone inundation is"); 16-12 ("[t]his report marks the first time broad ecological criteria have been used to assess the reaches of the [UMRS]").

71. The 2008 Report concludes that "[t]he current condition of the [UMRS] is heavily influenced by its agriculture-dominated basin and by the dams, *channel training structures, dredging, and levees that regulate flow distribution*." 2008 Report at 3 (emphasis added). While since the 1960s improvements in sewage treatment and land use practices have helped, the [UMRS] remains in a highly degraded state and faces substantial challenges including:

1. High sedimentation rates in some backwaters and side channels;
2. An altered hydrologic regime resulting from modifications of river channels, the floodplain, and land use within the basin, and from dams and their operation;
3. Loss of connection between the floodplain and the river, particularly in the southern reaches of the [UMRS];
4. Non-native species (*e.g.*, common carp [*Cyprinus carpio*], Asian carps

[*Hypophtalmichthys* spp.], zebra mussels [*Dreissena polymorpha*]);

5. High levels of nutrients and suspended sediments; and

6. Degradation of floodplain forests.

Id. at 3.

72. The 2008 Report describes how our understanding of the effects of locks and dams has changed since the original EISs were completed. These structures were initially thought to have beneficial ecological effects because they created new aquatic habitats and "a short-term increase in river productivity." *Id*. at 15. *See also, e.g.*, Rock Island EIS (1974) at 1 (the "impact of operating the lock and dam system is largely beneficial to both the natural and human environment"). This is no longer an accurate assessment. Instead, it is now clear that construction and operation of the locks and dams is a major cause of the severe ecological decline of the UMRS. 2008 Report at 15, 83. Largely due to changes caused by the Project, "[i]n all reaches, sedimentation has filled-in many backwaters, channels, and deep holes. In the lower reaches, sediments have completely filled the area between many wing dikes producing a narrower channel and new terrestrial habitat. Erosion has eliminated many islands, especially in impounded zones." *Id*. at 6.

73. While erosion and sediment deposition can be natural ecological processes, the Regulating Works Project has fundamentally changed those natural processes, profoundly reconfiguring the UMRS and its ecosystems. Instead of a free-flowing river, the UMRS is now a series of pools, with flow and water levels controlled by locks and dams. This slower flow of water causes sediment to accumulate in areas such as backwater, side channel, and braided habitats, making river depth less diverse. Since many animals require different, specific depths of water, or the absence of sediment, the lack of habitat diversity is a significant and growing problem. The areas between wing dams often completely fill with sediment, eliminating aquatic habitat altogether. In addition, sediment often connects sandbars or islands to the riverbank, leaving birds' nests vulnerable to land-based predators.

74. Since the original EISs were completed, hundreds of studies have been published

addressing large river sediment transport and deposition, and sedimentation is now well recognized as one of the river's most critical ecological problems. *See, e.g.*, DeHaan, H.C. 1998, "Large River Sediment Transport and Deposition: An Annotated Bibliography," U.S. Geological Survey, Environmental Management Technical Center, Onalaska, Wisconsin, April 1998, LTRMP 98-T002 (identifying more than 250 scientific studies addressing large river sediment transport and deposition published since 1976); Pierre Y. Julien and Chad W. Vensel, Department of Civil and Environmental Engineering Colorado State University, "Review of Sedimentation Issues on the Mississippi River, Draft Report Presented to the UNESCO," ISI, November 2005 (referencing more than 100 studies published between 1979 and 2005). This new scientific information demonstrates that the Regulating Works Project alters sedimentation and harms fish and wildlife and their habitat.

75. The scientific community now recognizes that river training structures increase flood heights ("stages") and thus the frequency and severity of flooding. The original EISs did not discuss this possibility. Between 1986 and 2013, at least forty-eight studies attributed increasing flood heights to the construction of instream structures, and at least seventeen studies between 2000 and 2013 discussed this effect on the Mississippi River specifically. In the Netherlands, the government has begun modifying river training structures on the Rhine River to reduce this recognized risk. *See* GAO Report at 41. The Corps claims to have commissioned "independent technical reviews" that question the connection between river training structures and increased flood risk, but these studies were not independent and their findings are flawed and challenged by experts. The Corps has failed to prepare an EIS on the Regulating Works Project's impacts on flooding that includes "[a]ccurate scientific analysis" and "expert agency comments" as NEPA requires. 40 C.F.R. § 1500.1(b).

76. This new information is especially important in light of the Corps' recognition in the EIS prepared by the St. Louis District in 1976 that some impacts of the Regulating Works Project were not "adequately assessed" or "not yet fully understood," and that reassessment of the Project would probably be necessary within five years. *See id*. at 23.

77. The EAs for the New Projects prepared in 2014 describe "new circumstances and information" that necessitated an SEIS for the Corps' regulating works activities. *See* Dogtooth Bend Final EA and FONSI at 2-3 ("significant new circumstances and information on the potential impacts of the Regulating Works Project" include newly listed threatened and endangered species, new information "on the impacts of river training structures and dredging on fish and macroinvertebrates," and new information "on the effects of navigation on fish and wildlife resources"); Monsenthein/Ivory Landing Final EA and FONSI at 2-3 (same); Eliza Point/Greenfield Bend Final EA and FONSI at 2-3 (same). These changes and information likewise pertain to the effects of the Corps' O&M activities. Thus, an SEIS for the Regulating Works Project cannot be complete unless it analyzes *both* sets of activities—regulating works *and* O&M activities--and their cumulative effects. The Project's 2017 SEIS fails to do so.

78. The Project's adverse impacts on the UMRS's ecosystems have harmed its fish and wildlife populations. Between 1976 and 1991, at least five species found in these ecosystems were added to the list of threatened or endangered under the Endangered Species Act ("ESA"), 16 U.S.C. section 1531 et seq. In May 2000, the U.S. Fish and Wildlife Service ("FWS") released a Biological Opinion concluding that the Project would jeopardize the continued existence of the pallid sturgeon and the Higgins eye pearly mussel, result in the incidental take of the least tern and the winged mapleleaf mussel, and likely adversely affect the bald eagle, the Indiana bat, and the decurrent false aster. In 2012, four species of freshwater mussel, all of which could be present in the UMRS, were added to the endangered species list. Plaintiffs are informed that the Corps has not consulted with FWS regarding the potential effects of the Project on these mussels, even though the ESA requires such consultation. 16 U.S.C. § 1536; 50 C.F.R. §§ 402.12-402.14.

79. Mussels play a key role in aquatic environments. They are an important food source for mammals as well as fish, and they filter the water, removing phytoplankton, bacteria, and fungi. Mussels also attach themselves to the river bottom, where they help to stabilize the river bed. Algae and insect larvae use mussel shells as a home. The algae and larvae, in turn, attract fish who feed on them. Dredging and disposal of dredged material kill mussels, as do

clearing riverbeds and banks, and building channel structures. Zebra mussels, an exotic species brought in by barges traveling upstream, have spread throughout the UMRS, and are a serious threat to native freshwater mussels.

80. Numerous other species found in the UMRS are listed under individual states' endangered species acts. For example, Wisconsin's threatened and endangered species list includes at least sixteen species of fish, ten species of mussel, two species of turtle, and a frog found in the UMRS. Minnesota's list includes at least ten species of fish, four species of turtle, and many different mussels found in the UMRS. Iowa, Illinois, and Missouri all list a number of fish, turtles, snakes, and mussels found in the UMRS as state threatened and endangered species. Many of these species were listed after the 1970s EISs were completed.

81. The UMRS is also home to a number of birds that play important ecosystem roles, including the bald eagle, the little blue heron, and many species of sandpiper, warbler, and sparrow. The FWS' 2000 Biological Opinion found that continued operation of the Regulating Works Project would result in the incidental take of the least tern because river training and flow control activities have drastically reduced the least terns' nesting and foraging habitat, and diminished nutrient cycling in the river has reduced the populations of small fish. River training structures have also changed the flow of the river in ways that render least tern nesting sites more vulnerable to land-based predators. 2000 Biological Opinion at 56-63.

82. Many bird species depend upon the UMRS and its wet mudflats and shallow waters for foraging. As discussed, the Project has profoundly altered the natural flow and rhythms of the UMRS's rivers, reducing shallow areas and virtually eliminating seasonal inundation of the floodplain. This leaves birds that depend upon shallow waters and wet mudflats without a foraging ground. Many, like the least tern, require sandbars or beaches for nesting. As discussed, the Project has eliminated many such areas. The Project's dredging and channelization are two primary causes of the habitat loss that threatens many migratory and resident shorebirds in the UMRS. *See, e.g.*, Potter, B. A., R. J. Gates, G. J. Soulliere, R. P. Russell, D. A. Granfors, and D. N. Ewert, "Upper Mississippi River and Great Lakes Region Joint Venture Shorebird

Habitat Conservation Strategy," U. S. Fish and Wildlife Service, 2007. *See also*, Nelson and Wlosinski, "Wetland Birds of the Upper Mississippi River National Wildlife and Fish Refuge," 61 Passenger Pigeon 299, 305 (1999) (concluding that habitat loss "is a constant problem due to the mandated operation of the commercial navigation channel, the continued inundation and aging of the navigation pools, and decline of the bottomland forest with minimal regeneration and human disturbance").

83. Since the original Project EISs were completed in the 1970s there have been significant documented changes in rainfall, streamflow, and climate within the UMRS. For example, in March 2005, the U.S. Geological Survey released a study showing upward trends in rainfall and streamflow for the Mississippi River. USGS Fact Sheet 2005-3020, "Trends in the Water Budget of the Mississippi River Basin, 1949-1997."

84. In 2009, the U.S. Global Climate Change Research Program issued a report showing that the Midwest experienced a thirty-one percent increase in very heavy precipitation events (defined as the heaviest one percent of all daily events) between 1958 and 2007. Thomas R. Karl, Jerry M. Melillo, and Thomas C. Peterson, (eds.), "Global Climate Change Impacts in the United States," Cambridge University Press, 2009 at 32 (available at www.globalchange.gov/usimpacts). That study also reports that during the past fifty years, "the greatest increases in heavy precipitation occurred in the Northeast and the Midwest." *Id*. Models predict that heavy downfalls will continue to increase:

> Climate models project continued increases in the heaviest downpours during this century, while the lightest precipitation is projected to decrease. Heavy downpours that are now 1-in-20-year occurrences are projected to occur about every 4 to 15 years by the end of this century, depending on location, and the intensity of heavy downpours is also expected to increase. The 1-in-20-year heavy downpour is expected to be between 10 and 25 percent heavier by the end of the century than it is now. . . . Changes in these kinds of extreme weather and climate events are among the most

serious challenges to our nation in coping with a changing climate.

Id. Conversely, droughts may also increase in their frequency and severity.

85. Since the original Project EISs were completed, there have been significant and fundamental changes in federal law and policy regarding wetlands and floodplain management. For example, in 1977, then-President Carter issued Executive Order 11990, which directs each federal agency, in carrying out agency policy, to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the beneficial values of wetlands. Executive Order 11988, issued the same year, directs federal agencies to "reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains."

86. In 1986, Congress enacted a number of fundamental changes to the Corps' civil works program. For example, it established specific mitigation provisions for the Corps' civil works projects. WRDA of 1986 (P.L. 99-662), section 906, 33 U.S.C. § 2283. It also authorized the Corps to modify existing water resources projects and operations to improve the quality of the environment. WRDA of 1986 (P.L. 99-662), section 1135, 33 U.S.C. § 2309(a). In an effort to rectify the Project's past harms, Congress also established the Upper Mississippi River System Environmental Management Program to help replace and enhance habitat and implement long term resource monitoring on the Upper Mississippi and Illinois Rivers. WRDA of 1986 (P.L. 99-662), section 1103, 33 U.S.C. § 652.

87. In 1990, that year's WRDA (P.L. 101-640) established "environmental protection as one of the primary missions of the Corps of Engineers in planning, designing, constructing, operating, and maintaining water resources projects." 33 U.S.C. § 2316(a) (emphasis added). The Act further establishes "an interim goal of no overall net loss of the Nation's remaining wetlands base, as defined by acreage and function, and a long-term goal to increase the quality and quantity of the Nation's wetlands, as defined by acreage and function." 33 U.S.C. § 2317(a)(1).

88. In 2007, Congress enacted new and stricter mitigation requirements for Corps civil

works projects that would apply to all project proposals submitted to Congress or re-evaluated under NEPA. WRDA of 2007 (P.L. 110-114), section 2036, 33 U.S.C. § 2283(d). These include enhanced mitigation requirements established for the Clean Water Act's section 404 regulatory program, which were substantially modified in 2008 (33 C.F.R. Parts 325 and 332, 40 C.F.R. Part 230). Congress also established a new federal water policy requiring all Corps projects to protect and restore the environment and avoid the unwise use of floodplains. WRDA of 2007 (P.L. 110-114), section 2031, 42 U.S.C. § 1962-3.

89. Recognizing that significant efforts would be required to restore the UMRS due to the ecological damage caused by the Project, in 2007 Congress authorized $1.7 billion to "ensure the environmental sustainability of the existing Upper Mississippi River and Illinois Waterway System" and directed the Secretary of the Army to modify "the operation of the Upper Mississippi River and Illinois Waterway System to address the cumulative environmental impacts of operation of the system and improve the ecological integrity of the Upper Mississippi River." WRDA of 2007 (P.L.110-114), section 8004, 33 U.S.C. § 652 note.

VIII. THE CORPS VIOLATED THE NATIONAL ENVIRONMENTAL POLICY ACT

(Violation of NEPA, 42 U.S.C. § 4231 et seq.)

(Against all Defendants)

90. Plaintiffs incorporate by reference all preceding and following paragraphs.

A. The Project Is a Major Federal Action Significantly Affecting the Quality of the Human Environment, and Thus Requires Preparation of an EIS Under NEPA.

91. A "major federal action" is an action "with effects that may be major and which [is] potentially subject to Federal control and responsibility." 40 C.F.R. § 1508.18. Its "significance" refers to the action's context and the intensity of its impacts, including its cumulative effects. 40 C.F.R. § 1508.27.

92. The Project is a major federal action and its impacts are significant. It involves dredging, extensive manipulation of water level and flow, operation and maintenance of locks and

dams, and widespread construction of river training structures and bank hardening features called revetments throughout the Middle Mississippi River. It has extensive, well-recognized, and significant environmental effects on the Mississippi River and its surrounding floodplains.

93. For these reasons, the Corps has acknowledged that the Project constitutes "a major federal action significantly affecting the quality of the human environment," and prepared four EISs on portions of the Project in the mid-1970s, a fifth EIS for maintenance activities in the St. Paul District in 1997, and an SEIS for the Project's regulating works – but not its operations and maintenance activities such as dredging – in August 2017. The Corps' failure to include the Project's O&M activities in its 2017 SEIS violates NEPA. Federal courts have ruled repeatedly that annual maintenance dredging of the Mississippi River is a major federal action requiring preparation of an EIS. *Wisconsin v. Callaway*, 371 F. Supp. 807 (W.D. Wis. 1974); *Mississippi v. Marsh*, 710 F. Supp. 1488 (S.D. Miss. 1989).

B. The 2017 Final Supplemental EIS ("FSEIS") Is Insufficient Because it Overlooks the Impacts of Operations and Maintenance Activities and Significant New Circumstances.

94. The 2017 FSEIS is inadequate for numerous reasons, which are explained below. First, as noted the FSEIS overlooks the Project's O&M and revetment activities, which include its dredging and dredged material disposal along the Middle Mississippi River. Just as the Corps previously agreed with Plaintiffs that significantly changed circumstances since the Corps prepared its original EISs in the 1970s required preparation of an SEIS for its regulating works activities, which it finally completed in 2017, so too significantly changed circumstances since the 1970s require the Corps to prepare an SEIS for its operations and maintenance activities, including dredging to control the river's flow and depth, and the disposal of dredged material.

95. Piecemeal analyses of individual components of the Project do not fulfill the Corps' obligation to prepare a comprehensive SEIS for the entire Project. The SEIS should include an analysis of the Project's O&M and revetment activities along with potential alternatives to those activities, and a discussion of their cumulative effects, based on updated science and the current environmental conditions on the river.

C. The Purpose and Need Statement Fails to Comply with NEPA.

96. Second, the FSEIS is deficient because its Purpose and Need Statement is drawn so narrowly that only the Project as proposed can possibly qualify for approval, and other, reasonable alternatives are consequently and impermissibly dismissed from consideration. An appropriate statement of Purpose and Need is crucially important because it "delimit[s] the universe of the action's reasonable alternatives,"[15] "only alternatives that accomplish the purposes of the proposed action are considered reasonable, and only reasonable alternatives require detailed study. . . ."[16] Because the Purpose and Need Statement assumes that only regulating works can achieve the Project's purposes, the FSEIS only considered two options: the Project, and no Project. As a result, the FSEIS prematurely — and impermissibly — dismissed all reasonable alternatives from consideration and consequently preordained approval of the Project.

97. The FSEIS' Purpose and Need Statement states that "[t]he long-term goal of the Project, as authorized by Congress, is to obtain and maintain a navigation channel and reduce federal expenditures by alleviating the amount of annual maintenance dredging *through the construction of regulating works*." FSEIS at ES-1 (emphasis added). This statement is in direct conflict with the Project's authorizing legislation, as discussed in paragraphs 239-247 below.

98. This statement also violates NEPA in three respects: (1) it is drawn so narrowly that it effectively limits the analysis of alternatives to only those that will continue the status quo — building more regulating works — to carry out the Regulating Works Project; (2) it fails to account for a host of Congressional directives that require and/or promote the protection and restoration of the Mississippi River's environmental and water resources; and (3) it fails to establish an actual need for the Project, including the need to construct new river training

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[15] *Citizens Against Burlington v. Busey*, 938 F.2d 190, 195 (D.C. Cir. 1991). *See also Wyoming v. U.S. Dep't of Agric.*, 661 F.3d 1209, 1244 (10th Cir. 2011) ("how the agency defines the purpose of the proposed action sets the contours for its exploration of available alternatives."); *Sierra Club v. U.S. Dep't of Transp.*, 310 F.Supp.2d 1168, 1192 (D. Nev. 2004) (citing *City of Carmel-By-The-Sea v. U.S. Dep't of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997)).

[16] *Webster v. U.S. Department of Agriculture*, 685 F.3d 411, 422 (4th Cir. 2012); *Methow Valley Citizens Council v. Regional Forester*, 833 F.2d 810, 815-16 (9th Cir. 1987).

structures. The problems created by this legally inadequate Purpose and Need Statement are compounded by the Corps' explicit refusal to evaluate alternatives that may require additional or changed Congressional authorization, in direct violation of NEPA.[17] *See* FSEIS at ES-1.

99. Plaintiffs have, to no avail, repeatedly asked the Corps to revise its SEIS to instead acknowledge the need to:

(1) Improve the degraded conditions of the Middle Mississippi River;

(2) Protect and restore important and diverse in-stream, channel border, and side channel habitats;

(3) Restore as much of the natural functions of the Middle Mississippi River as possible;

(4) Conserve and restore populations of fish and wildlife species affected by the Project;

(5) Reduce the risks of flooding created by the extensive construction of river training structures;

(6) Maintain a viable navigation system; and

(7) Ensure full compliance with Federal laws and policies.

1. The Purpose and Need Statement Improperly Limits the Alternatives Analysis

100. The federal courts have long acknowledged that:

"One obvious way for an agency to slip past the strictures of NEPA is to contrive a purpose so slender as to define competing "reasonable alternatives" out of consideration (and even out of existence). . . . If the agency constricts the definition of the project's purpose and thereby excludes what truly are reasonable alternatives, the EIS cannot fulfill

[17] 42 C.F.R. §§ 1502.14, 1506.2(d); CEQ, Forty Most Asked Questions Concerning CEQ's NEPA Regulations (reasonable alternatives that are outside the legal jurisdiction of the lead agency or outside the scope of what Congress has approved or funded must be analyzed).

its role."[18]

101. Accordingly, the courts have made it clear that an agency may not define a project so narrowly that it "forecloses a reasonable consideration of alternatives"[19] or makes the final EIS "a foreordained formality."[20]

102. The FSEIS' Purpose and Need Statement violates these statutory commands because it effectively mandates continuation of river training structure and revetment construction to reduce dredging costs, regardless of public safety impacts, ecological impacts, or national priorities. Consequently, it precludes meaningful consideration of alternatives that do not include these features.

2. The Purpose and Need Statement Fails to Account for Clear Congressional Directives

103. The Purpose and Need Statement should, but fails to, account for the full suite of laws and policies that are applicable to Corps projects, including those expressed in "the agency's statutory authorization to act, *as well as in other Congressional directives*,"[21]including:

a. The National Water Resources Planning Policy established by Congress in 2007. This policy directs that "all water resources projects" should "protect[] and restor[e] the functions of natural systems and mitigat[e] any unavoidable damage

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[18] *Simmons v. United States Army Corps of Eng'rs*, 120 F.3d 664, 666 (7th Cir. 1997).
[19] *Fuel Safe Washington v. Fed. Energy Regulatory Comm'n*, 389 F.3d 1313, 1324 (10th Cir. 2004) (quoting *Davis v. Mineta*, 302 F.3d 1104, 1119 (10th Cir. 2002); *Citizens' Comm. to Save Our Canyons v. U.S. Forest Serv.*, 297 F.3d 1012, 1030 (10th Cir. 2002); *Friends of Southeast's Future v. Morrison*, 153 F.3d 1059, 1066 (9th Cir. 1998) ("An agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency's power would accomplish the goals of the agency's action".); *Simmons v. United States Army Corps of Eng'rs*, 120 F.3d at 666; *City of New York v. United States Dep't of Transp.*, 715 F.2d 732, 743 (2d Cir. 1983), *cert. denied*, 456 U.S. 1005 (1984) ((holding that "an agency may not narrow the objective of its action artificially and thereby circumvent the requirement that relevant alternatives be considered); *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991), *cert. denied* 502 U.S. 994 (1991).
[20] *City of Bridgeton v. FAA*, 212 F.3d 448, 458 (8th Cir. 2000) (quoting *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d at 196 and citing *Simmons v. U.S. Army Corps of Eng'rs*, 120 F.3d 664, 666 (7th Cir. 1997)); *National Parks and Conservation Association v. Bureau of Land Management*, 606 F.3d 1058, 1070 (9th Cir. 2010).
[21] *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d at 196 (emphasis added).

to natural systems." 42 U.S.C. § 1962-3(a)(3).

b. The National Environmental Policy Act enacted in 1970. NEPA commands the "Federal Government to use all practicable means" to, among other things: (i) "fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;" (ii) ensure "safe, healthful, productive" surroundings for all Americans; and (iii) "attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences." 42 U.S.C. § 4331(b).

c. The directives to protect the environment, and fish and wildlife, that are set forth in the Clean Water Act (33 U.S.C. § 1251 et seq.), the Endangered Species Act (16 U.S.C. § 1531 et seq.), the Clean Air Act (42 U.S.C. § 7401 et seq.), the Corps' civil works mitigation requirements (33 U.S.C. § 2283(d)), and the Water Resources Development Act of 1990 (33 U.S.C. § 2316) that changed the Corps' fundamental mission to "include environmental protection as one of the primary missions of the Corps of Engineers in planning, designing, constructing, operating, and maintaining water resources projects."

d. The Fish and Wildlife Coordination Act, which directs that "wildlife conservation shall receive equal consideration and be coordinated with other features of water-resource development," and that such development prevent harm to, and improve the health of, fish and wildlife. 16 U.S.C. §§ 661, 662.

104. Corps regulations in place since 1980 state that:

"Enhancement of the environment is an objective of Federal water resource programs to be considered in the planning, design, construction, and *operation and maintenance of projects*. Opportunities for enhancement of the environment are sought through each of the above phases of project development. Specific considerations may include, but are not limited to: *actions to preserve or enhance critical habitat for fish and wildlife, maintain or enhance water quality* [*and*] improve *streamflow*; preservation and restoration of

certain cultural resources; *and the preservation or creation of wetlands*."
33 C.F.R. § 236.4 (emphasis added).

105. The FSEIS fails to incorporate these critically important post-project authorization Congressional directives, and longstanding Corps' policy objectives, into the Project's purpose as required by law.[22]

3. The Purpose and Need Statement Fails to Demonstrate Project Need

106. The Purpose and Need Statement fails to demonstrate that there is a need for new river training structures (*e.g.*, dikes, weirs, chevrons,) and additional revetment, as opposed to other actions that could achieve the same or similar channel-maintenance objectives.

107. New navigation structures are clearly not required to maintain the navigation channel as the current dredging regime already achieves that objective. The Corps acknowledges that the actual purpose of the river training structures is, instead, to reduce the costs of dredging. Yet the FSEIS provides no comparative-cost, or benefit-cost, assessment to support its claim that construction of these structures is less expensive than dredging. Nor does the FSEIS provide an assessment of the costs of the flooding and other environmental harms that the structures cause. Moreover, the FSEIS fails to provide any estimate of future costs with, and without, new river training structure construction, and fails to identify those areas likely to require continued dredging even if additional river training structures are constructed.

108. The FSEIS also fails to provide critical information on sediment loads and sediment transport in the Middle Mississippi River,[23] making it impossible for the public and decision makers to assess the need for additional river training structures.

109. Properly demonstrating a need for construction of new river training structures –

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[22] *See Citizens Against Burlington, Inc. v. Busey*, 938 F.2d at 196; *National Parks and Conservation Association v. Bureau of Land Management*, 606 F.3d at 1070-1072.
[23] The Middle Mississippi River is, as noted, the segment between the Mississippi River's confluences with the Missouri River to the north and the Ohio River to the south.

on the basis of legitimate, scientifically sound, and detailed factual information – is fundamental to an adequate NEPA analysis, and absolutely critical for this Project as the river training structures create a significant risk of increased flooding for river communities and, by the Corps' own acknowledgement, will lead to significant adverse impacts to the environment.

D. The FSEIS' Alternatives Analysis Fails to Comply with NEPA

110. Third, the FSEIS fails to "[r]igorously explore and objectively evaluate all reasonable alternatives,"[24]and provide a "thorough consideration of all appropriate methods of accomplishing the aim of the action" and an "intense consideration of other more ecologically sound courses of action."[25] Rigorous and objective evaluation of all reasonable alternatives is the "heart of the environmental impact statement,"[26] and "must be undertaken in good faith" rather than "to justify a decision already reached."[27]

111. While an EIS need not explore every conceivable alternative, it must rigorously explore all reasonable alternatives that are consistent with its basic policy objective and not remote or speculative. A viable but unexamined alternative renders an EIS inadequate.[28] An alternative may not be disregarded merely because it does not offer a complete solution to the problem,[29] nor because it would require additional Congressional authorization. To the contrary, the alternatives analysis must "[i]nclude reasonable alternatives not within the jurisdiction of the lead agency."[30]

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[24] 40 C.F.R. § 1502.14.
[25] *Environmental Defense Fund, Inc. v. Corps of Engineers of U.S. Army*, 492 F.2d 1123, 1135 (5th Cir. 1974).
[26] 40 C.F.R § 1502.14.
[27] *Citizens Against Toxic Sprays, Inc. v. Bergland*, 428 F.Supp. 908, 933 (D.Or. 1977).
[28] *E.g. Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 810, 814 (9th Cir. 1999).
[29] *Natural Resources Defense Council, Inc. v. Morton*, 458 F.2d 827, 836 (D.C. Cir. 1972).
[30] 40 C.F.R. § 1502.14(c); *Natural Resources Defense Council v. Morton*, 458 F.2d at 834-836 (alternative sources of energy had to be discussed, despite federal legislation indicating an urgent need for offshore leasing and mandating import quotas; Department of Interior had to consider reasonable alternatives to offshore oil lease which would reduce or eliminate the need for offshore exploration, such as increased nuclear energy development and changing natural gas pricing, even though that would require Congressional action); *Environmental Defense Fund v. Froehlke*, 473 F.2d 346 (8th Cir. 1974) (acquisition of land to mitigate loss of land from river channel project

112. Failure to examine an appropriate range of alternatives likewise renders an alternatives analysis inadequate.[31] The greater the impacts and scope of the proposed action, the greater the range of alternatives that must be considered.[32] The range is not sufficient if each alternative has a similar end result.[33]

113. The FSEIS' alternatives analysis is inadequate in six principal respects: (1) it limits alternatives to just one binary choice between two options: the Project as proposed, and no Project; (2) it refuses to consider alternatives requiring additional Congressional authorization; (3) it fails to consider alternatives that would address significant Project impacts by reducing flood risks and restoring ecological health; (4) it fails to provide an informed and meaningful consideration of alternatives; (5) it fails to identify the environmentally preferable alternative; and (6) it is based on a fundamentally flawed analysis of direct, indirect, and cumulative impacts.

1. The FSEIS Limits Alternatives to Only the Binary Choice Between the Project as Proposed and No Project

114. The FSEIS examines only two alternatives, the Continue Construction Alternative and the No New Construction alternative. This violates NEPA's mandate to evaluate an appropriate range of alternatives, for at least three reasons.

115. First, as discussed below there are other clearly reasonable alternatives that should be examined because they feasibly address the Project's significant impacts.

116. Second, the scope and impacts of the Project mandate evaluation of a much broader range of alternatives than those that existed when Congress authorized the Regulating Works Project in 1927 based on a plan adopted in 1881 and updated in 1910.[34] The range of

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must be considered even though it would require legislative action).

[31] *E.g. Resources Ltd., Inc. v. Robertson*, 35 F.3d 1300, 1307 (9th Cir. 1993).

[32] *Alaska Wilderness Recreation and Tourism v. Morrison*, 67 F.3d 723, 729 (9th Cir. 1995); *see Sierra Club v. Espy*, 38 F.3d 792, 803 (5th Cir. 1994) (the required range of alternatives decreases as the environmental impact of the proposed action becomes less and less substantial).

[33] *State of California v. Block*, 690 F.2d 753, 767 (9th Cir. 1982) (the range of alternatives was inadequate where all eight alternatives developed a substantial portion of wilderness).

[34] *E.g., Resources Ltd., Inc. v. Robertson*, 35 F.3d 1300, 1307 (9th Cir. 1993).

required alternatives is determined by the nature and scope of the proposed action. The greater the impacts and scope of the proposed action, the greater the range of alternatives that must be considered.[35] Both the scope and the impacts of the Project are far-reaching. For example:

(a) The Project has caused, and will continue to cause, direct, indirect, and cumulative impacts to 195 miles of the Mississippi River and its floodplain, and the hundreds of species that rely on those vital riverine and riparian resources.

(b) It is well documented that the Project has caused and is causing significant adverse impacts to the Middle Mississippi River, as confirmed in the 2000 Biological Opinion and the numerous studies incorporated by reference in the FSEIS' cumulative impact analysis. The FSEIS acknowledges that the Corps' Preferred Alternative—the Project--will cause significant adverse impacts through the destruction of at least an additional 1,100 acres of vitally important main channel border habitat.

(c) Independent scientists, conservation organizations, and river communities remain deeply concerned about the Project's impacts to flood stages. Extensive peer-reviewed science demonstrates that river training structures have caused significant increases in flood heights along broad stretches of the Mississippi River. A 2016 peer-reviewed study demonstrates that the excessive constriction caused by river training structures (and to a lesser extent, levees) has led to fundamental changes in the way the Middle Mississippi River responds to flood events.

(d) The FSEIS states the preferred alternative will result in "constructing future river training structures that equate to approximately 4.4 million tons of rock" and continued dredging of an average of about 2.4 million cubic yards per year.[36]

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[35] *Alaska Wilderness Recreation and Tourism v. Morrison*, 67 F.3d at 729; *see Sierra Club v. Espy*, 38 F.3d at 803 (required range of alternatives decreases as the environmental impact of the proposed action becomes less and less substantial).

[36] FSEIS at 42.

117. The Project's broad scope, duration and impacts dictate evaluation of a far greater range of alternatives than the two evaluated in the FSEIS, including those identified below.

2. The FSEIS Fails to Consider Alternatives That Require Additional Congressional Authorization

118. The alternatives analysis must "[i]nclude reasonable alternatives not within the jurisdiction of the lead agency."[37] This means that an alternative may not be disregarded merely because it would require additional Congressional authorization. *Id*. An alternative also may not be disregarded merely because it does not offer a complete solution to the problem.[38] A viable but unexamined alternative renders an EIS inadequate.[39]

119. Contrary to these NEPA requirements, the FSEIS refuses to consider alternatives that would potentially require additional Congressional authorization, including:

(1) An alternative that removes or modifies existing river training structures in the Project area to restore backwater, side channel, and braided river habitat; and reduce flood risks. The FSEIS acknowledges that this alternative need not adversely affect navigation. FSEIS at 191-192.

(2) An alternative that maintains the authorized navigation channel through other approaches, including alternative upstream water level management regimes, alternative dredging and dredged spoil disposal activities, and the development of new, innovative techniques.

(3) An alternative that proposes ecological restoration and fish and wildlife

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[37] 40 C.F.R. § 1502.14(c); *Natural Resources Defense Council v. Morton*, 458 F.2d 827, 837 (D.C. Cir. 1972) ("The mere fact that an alternative requires legislative implementation does not automatically establish it as beyond the domain of what is required for discussion, particularly since NEPA was intended to provide a basis for consideration and choice by the decision-makers in the legislative as well as the executive branch."); *Environmental Defense Fund v. Froehlke*, 473 F.2d 346 (8th Cir. 1974) (acquisition of land to mitigate loss of land from river channel project must be considered even though it would require legislative action).

[38] *Natural Resources Defense Council, Inc. v. Morton*, 458 F.2d at 836.

[39] *E.g. Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d at 810, 814.

conservation as authorized Project Purposes, and evaluates restoration activities that would improve the ecological health and resiliency of the Mississippi River, its floodplain, and the fish and wildlife that inhabit them.[40]

113. Despite NEPA's mandate for consideration of a reasonable range of alternatives, and the compelling need to identify and evaluate less environmentally damaging alternatives, the FSEIS states that it has not examined any alternatives that the Corps currently deems to be outside of the existing authorization, or that do not specifically track approaches identified by Congress more than 100 years ago. *See* FSEIS at ES-2 ("this SEIS is not to consider … reevaluating the need for the Regulating Works Project or the methods to be used") and 30 ("this SEIS is not a … re-evaluation of how a project should be carried out").

114. Limiting the public's choice to either more of the same, or nothing, violates NEPA. NEPA "prevents federal agencies from effectively reducing the discussion of environmentally sound alternatives to a binary choice between granting and denying an application."[41]

3. The FSEIS Fails to Evaluate a Reasonable Range of Alternatives That Would Address Significant Project Impacts.

120. The FSEIS fails to evaluate clearly reasonable alternatives that would address significant Project impacts, as required by NEPA, including:[42]

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[40] That these types of activities could be carried out under other authorities does not obviate the need for this approach.

[41] *Save Our Cumberland Mountains v. Kempthorne*, 453 F. 3d 334, 345 (6th Cir. 2006), *citing Davis v. Mineta*, 302 F.3d 1104, 1122 (10th Cir. 2002) ("[O]nly two alternatives were studied in detail: the no build alternative, and the preferred alternative. [The agency] acted arbitrarily and capriciously in approving an [environmental assessment] that does not provide an adequate discussion of [p]roject alternatives."); *Colorado Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1174 (10th Cir. 1999) ("[T]he National Environmental Policy Act and Council on Environmental Quality Regulations require [an agency] to study in detail all 'reasonable' alternatives [in an environmental impact statement]. . . . [Courts] have interpreted this requirement to preclude agencies from defining the objectives of their actions in terms so unreasonably narrow they can be accomplished by only one alternative.").

[42] These alternatives, and the critical need for a National Academy of Sciences study, were also identified in Plaintiffs' Scoping Comments for the Supplemental Environmental Impact Statement

(1) A No New Construction Alternative that does not assume the Project requires new training structures, and provides a comprehensive assessment of potential impacts.

(2) An alternative that removes or modifies existing river training structures in the Project area to restore backwater, side channel, and braided river habitat; and reduce flood risks. The FSEIS acknowledges that this alternative need not adversely affect navigation. *Id*. at 191-192.

(3) An alternative that minimizes the use of new river training structures, including by placing restrictions on the number and/or types of structures that can be utilized in a given reach based on a robust scientific assessment of the cumulative impacts of the different types of river training structures.

(4) An alternative that maintains the authorized navigation channel through other approaches, including alternative upstream water level management regimes, alternative dredging and dredged spoil disposal activities, and the development of new, innovative techniques.

(5) An alternative that evaluates restoration activities that would improve ecological health and resiliency of the Mississippi River and its floodplain and the fish and wildlife species that rely on these resources. This alternative should include the formal adoption of ecological restoration, and fish and wildlife conservation, as authorized Project Purposes.

112. As noted, despite NEPA's mandate for consideration of a reasonable range of alternatives, and the compelling need to identify less environmentally damaging ones, the FSEIS refused to consider any of these alternatives on the grounds they were outside existing Congressional authorization. The Corps claimed it must continue to use the techniques for carrying out the Project that Congress originally approved 110 years ago based on a Corps plan

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for the Middle Mississippi River Regulating Works Project, Public Notice 2013-744, submitted on February 14, 2014 and Plaintiffs' DSEIS comments submitted on January 18, 2017.

developed 139 years ago.[43] FSEIS at 3 and Appendix K.

121. According to the FSEIS:

"**Alternatives.** Congress provided the manner in which the navigation channel for the MMR should be obtained and maintained via the original Regulating Works Project authorization in 1910 and a modification to the authorization in 1927. *The purpose of this SEIS is not to consider a change to* that authorization through reevaluating the need for the Regulating Works Project or *the methods to be used to accomplish the goals of the project.* Rather, this document analyzes the impacts of the Regulating Works Project as it is currently constructed, operated, and maintained with current information that has become available since the completion of the 1976 EIS." FSEIS, ES-2 (emphasis added).

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"As described in Section 1.2 Purpose of and Need for NEPA Supplement, this SEIS is not a study or re-evaluation of how a project should be carried out, but an updated analysis of the impacts of an already authorized, on-going project; Congress has already provided the manner in which the navigation channel for the MMR is to be obtained and maintained via the Regulating Works Project authorization. Detailed consideration of any alternatives outside of this authorization would require a planning study for either modification of the Project or new authorization from Congress." FSEIS at 30.

122. The Corps' stated refusal to examine any alternatives that the Corps currently deems to be outside of the existing authorization, or that do not specifically track approaches identified by Congress more than 100 years ago, [44] renders the FSEIS inadequate as a matter of law. Common sense and modern science also clearly dictate a fundamentally different approach to evaluating alternatives.

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[43] FSEIS at 3 ("In the Rivers and Harbors Act of 1910, Congress authorized obtaining and maintaining the MMR to be carried out in accordance with the plan in 1881. . . .").

[44] The FSEIS states that "[i]n the Rivers and Harbors Act of 1910, Congress authorized obtaining and maintaining the MMR to be carried out in accordance with the plan in 1881. . . ." FSEIS at 3.

4. The FSEIS Fails to Provide an Informed and Meaningful Consideration of Alternatives

123. NEPA requires an "informed and meaningful" consideration of alternatives:

> "NEPA's requirement that alternatives be studied, developed, and described both guides the substance of environmental decisionmaking and provides evidence that the mandated decisionmaking process has actually taken place. [Citation.] Informed and meaningful consideration of alternatives – including the no action alternative – is thus an integral part of the statutory scheme."[45]

124. The FSEIS fails to satisfy the "informed and meaningful" review requirement for the two alternatives that it does evaluate because it fails to provide meaningful information on the actions that will be carried out under those alternatives. Neither alternative provides criteria for the triggering of future dredging, revetment, or river training structure construction. Neither alternative provides information concerning the likely locations of these future actions. Neither alternative adequately discloses and assesses the economic costs or environmental impacts of the likely future actions. The Continue Construction Alternative does not provide any information on the types of river training structures that will be used, nor disclose and describe the linear extent of river training structures that will be constructed. Yet the total linear feet of river training structures has a significant impact on flood heights.

125. The Independent External Peer Review (IEPR) Panel for the Project highlighted a number of these failings. The IEPR Panel concluded, among other things, that:

1. "It is not clear why impacts of future river training structure construction and the associated compensatory mitigation requirements were not evaluated in more detail with respect to specific locations in the MMR."
2. "The project description for the proposed action does not describe the decision-making process that will be employed for identifying new river training

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[45] *Bob Marshall Alliance v Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988) (internal cites omitted).

structure construction sites."

3. "The SEIS does not clearly describe the project construction features within the main report such that a link between the project and the level of impacts can be easily compared."[46]

126. Because the Corps has been implementing the Project since 1910, the agency should have information on likely future dredging needs and dredged spoil disposal sites, river training structure construction needs, and locations where the Corps contends that new revetment may be needed. Without this information it is not possible to meaningfully evaluate the impacts of the proposed alternatives.

127. The FSEIS also fails to provide "informed and meaningful" review of the two alternatives it does evaluate because that analysis was conducted with an improperly narrow project purpose. Indeed, this improperly narrow project purpose of reducing the costs of dredging by building more river training structures appears to be the determining factor in the FSEIS' selection of the Continue Construction Alternative even though that alternative will, according to the FSEIS, cause more environmental harm than the No New Construction Alternative.[47]

5. The FSEIS Fails to Identify the Environmentally Preferable Alternative

128. The Corps' Record of Decision for the Regulating Works Project must identify the "environmentally preferable" alternative[48] and agencies are encouraged to identify the environmentally preferable alternative in the Final EIS.[49] The environmentally preferable alternative is "the alternative that will promote the national environmental policy as expressed in

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[46] Final Independent External Peer Review Report on the Supplemental Environmental Impact Statement (SEIS) for the Mississippi River between the Ohio and Missouri Rivers (Regulating Works), October 13, 2016 ("Final IEPR Report").

[47] Compare FSEIS at 39 (The No New Construction Alternative "Does not achieve Congressionally authorized project objective of reducing federal expenditures by reducing dredging to a minimum") with FSEIS at 42 ("Based on the Project's Congressional authority and the continued benefit of the remaining construction, the Continue Construction Alternative with the described potential compensatory mitigation is the Preferred Alternative.")

[48] 40 C.F.R. § 1505.2.

[49] 40 C.F.R. § 1505.1(e).

NEPA's Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources."[50]

129. Identification of the environmentally preferable alternative is critical so that the public and decision makers can fully assess the appropriateness of the preferred alternative:

> "Through the identification of the environmentally preferable alternative, the decisionmaker is clearly faced with a choice between that alternative and others, and must consider whether the decision accords with the Congressionally declared policies of the [National Environmental Policy] Act."[51]

130. On the basis of the information provided in the FSEIS, the No New Construction alternative appears to be the environmentally preferable alternative since the Corps contends that it would not cause a significant loss of channel border habitat and would not otherwise require compensatory mitigation. However, the Corps does not identify the environmentally preferable alternative in the FSEIS, preventing the public from understanding and commenting on the Corps' views regarding the environmentally preferable alternative until *after* the Corps had made its final decision in its ROD.

6. The Alternatives' Analysis Is Based on a Fundamentally Flawed Analysis of Direct, Indirect and Cumulative Impacts.

131. In comparing and analyzing potential alternatives, the FSEIS failed to examine the direct, indirect, and cumulative environmental impacts of the flow regimes that the different alternatives would create, the conservation potential of those alternatives, and the means to mitigate adverse environmental impacts. 40 C.F.R. § 1502.16. As discussed in the following section of this Complaint, the FSEIS fails to properly evaluate the Project's impacts. A robust

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[50] President's Council on Environmental Quality, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18026 (March 23, 1981), as amended, Question 6.

[51] *Id*.

analysis of Project impacts is essential for determining whether less environmentally damaging alternatives are available.

E. The FSEIS Fails to Properly Evaluate Project Impacts

132. NEPA requires agencies to analyze all "reasonably foreseeable" environmental impacts of major federal action.[52] "If it is reasonably possible to analyze the environmental consequences in an EIS . . . the agency is required to perform that analysis."[53] This mandate applies to both site-specific and programmatic NEPA documents.[54]

133. The FSEIS fails to properly evaluate this Project's impacts, leading to a dangerously false picture of them. An EIS must consider an action's direct, indirect and cumulative effects. 40 C.F.R. §§ 1508.7-1508.8. Direct impacts are those that are caused by the action and occur at the same time and place as the action. Indirect impacts are also caused by the action, but are later in time or farther removed from the location of the action. 40 C.F.R. § 1508.8. Cumulative impacts are:

> "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

40 C.F.R. § 1508.7. A cumulative impact analysis ensures that the agency will not "treat the identified environmental concern in a vacuum."[55]

134. NEPA requires agencies to analyze all "reasonably foreseeable" direct, indirect and cumulative environmental impacts.[56] "If it is reasonably possible to analyze the environmental

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[52] 40 C.F.R. § 1508.8.
[53] *Kern v. U.S. Bureau of Land Mgmt.*, 284 F.3d 1062, 1072 (9th Cir. 2002).
[54] *Id.*
[55] *Grand Canyon Trust v. FAA*, 290 F.3d 339, 346 (D.C. Cir. 2002).
[56] 40 C.F.R. § 1508.8.

consequences in an EIS . . . the agency is required to perform that analysis."[57] This mandate applies to both site-specific and programmatic NEPA documents.[58]

135. Where site-specific impacts are "reasonably foreseeable" at the program planning stage, they must be evaluated in the programmatic EIS.[59] The Corps may not evade its obligation to analyze the reasonably foreseeable, site-specific environmental consequences of a larger program merely by saying that those consequences will be analyzed later.[60] Indeed, such procrastination is antithetical to NEPA's basic charge to undertake analysis and integrate it into agency decision making as early as possible.[61]

136. The FSEIS' impacts analysis must be based on, and present, "quantified or detailed information."[62] "General discussion of an environmental problem over a large area" is not sufficient and cannot satisfy NEPA.[63] Unsupported conclusory statements likewise do not suffice:

> "A conclusory statement unsupported by empirical or experimental data, scientific authorities, or explanatory information of any kind not only fails to crystalize the issues,

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[57] *Kern v. U.S. Bureau of Land Mgmt.*, 284 F.3d at 1072.
[58] *Id.*
[59] *Colorado Environmental Coalition v. Office of Legacy Management*, 819 F.Supp.2d. 1193, 1209 (D. Colo. 2011), reconsideration granted in part on other grounds, 2012 U.S. Dist. LEXIS 24126 (D. Colo. Feb. 27, 2012) (concluding that future site-specific mining activity was reasonably foreseeable at the lease stage because mining had previously taken place on the same public lands and thus must be reviewed at the programmatic leasing stage).
[60] *Kern v. U.S. Bureau of Land Mgmt.*, 284 F.3d at 1072.
[61] *See* 40 C.F.R. §§ 1501.2, 1502.5; *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1246 n. 9 (9th Cir. 1984) ("Reasonable forecasting and speculation is . . . implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as 'crystal ball inquiry,'" *quoting Scientists' Inst. for Pub. Info., Inc. v. Atomic Energy Comm'n*, 481 F.2d 1079, 1092 (D.C. Cir. 1973)); *City of Davis v. Coleman*, 521 F.2d 661, 676 (9th Cir. 1975) ("the purpose of an [EIS] is to evaluate the possibilities in light of current and *contemplated* plans and to produce an informed estimate of the environmental consequences. . . . Drafting an [EIS] necessarily involves some degree of forecasting. " (emphasis added)).
[62] *Neighbors of Cuddy Mountain v. U. S. Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1998); *Ecology Center v. Castaneda*, 574 F.3d 652, 666 (9th Cir. 2009) (requiring "quantified or detailed data"); *Natural Resources Defense Council v. Callaway*, 524 F.2d 79, 87 (2d Cir. 1975).
[63] *South Fork Band Council v. U.S. Dept. of Interior*, 588 F.3d 718 (9th Cir. 2009); *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1379-80 (9th Cir. 1998).

but affords no basis for a comparison of the problems involved with the proposed project and the difficulties involved in the alternatives."[64]

137. The FSEIS must utilize "high quality" science and "insure professional integrity, including scientific integrity, of the discussions and analysis in environmental impact statements."[65] If information essential to a reasoned choice among alternatives is not available, the Corps must obtain that information unless the cost of doing so would be "exorbitant."[66]

138. The FSEIS violates these fundamental NEPA requirements, because it relies extensively on unsupported conclusory statements and generalizations, omits necessary information, and fails to ensure the scientific integrity of its analyses. Consequently, the FSEIS almost certainly understates the adverse impacts of certain Project features it assesses.

139. The FSEIS's discussion of biological impacts lacks essential facts and analysis that tether specific impacts and benefits to specific Project features and mitigation. For example, the FSEIS claims that notching dikes and other potential actions under the Preferred Alternative will yield ecological benefits. However, the FSEIS provides no facts and analysis to support this conclusion. A 2012 study found that single feature restoration projects, such as the placement of weirs to increase habitat heterogeneity, are not effective at achieving biodiversity goals. That study recommends "baseline attributes and historic conditions be assessed and integrated into

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[64] *Seattle Audubon Society v. Moseley*, 798 F. Supp. 1473, 1479 (W.D. Wash. 1992), *aff'd* 998 F.2d (9th Cir. 1993); *see also, e.g., Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 995-996 (9th Cir. 2004) ("generalized or conclusory statements" in cumulative effects analyses do not satisfy NEPA); *Friends of the Earth v. Army Corps of Engineers*, 109 F. Supp. 2d 30, 38 (D.D.C. 2000) (ruling that the Corps must "provide further analysis" to satisfy NEPA because the Corps did not provide "the basis for any" of its claims that the project would have an insignificant impact or that fish and other organisms would simply move to other areas); *Sierra Club v. Norton*, 207 F. Supp. 2d 1310, 1335 (S.D. Ala. 2002) (stating "Defendant's argument in this case would turn NEPA on its head, making ignorance into a powerful factor in favor of immediate action where the agency lacks sufficient data to conclusively show not only that proposed action would harm an endangered species, but that the harm would prove to be 'significant'").

[65] 40 C.F.R. § 1502.24 ("Agencies shall insure professional integrity, including scientific integrity, of the discussions and analysis in environmental impact statements"); *Earth Island Inst. v. U.S. Forest Service*, 442 F.3d 1147, 1159-60 (9th Cir. 2006) (quoting 40 CFR §1502.24).

[66] 40 C.F.R. § 1502.22.

project design and implementation" to ensure the restoration strategy is truly site appropriate.[67] Similarly, a 2009 study found that almost all restoration projects that focused exclusively on rehabilitated physical habitat failed to restore invertebrate biodiversity.[68] Although Plaintiffs' comments on the Draft SEIS asked the Corps to carefully evaluate these studies, it failed to do so.

140. The FSEIS fails to analyze the Project's impacts on ecological restoration of the Middle Mississippi River. Although Plaintiffs requested this analysis in their comments on the Draft SEIS, the Corps failed to perform it.

1. The FSEIS Fails to Examine Reasonably Foreseeable Site-Specific Impacts

141. The FSEIS violates NEPA because it fails to examine reasonably foreseeable site-specific impacts. Where site-specific impacts are "reasonably foreseeable" at the program planning stage, they must be evaluated in the programmatic EIS.[69] The Corps may not evade this requirement by claiming these impacts will be examined through later environmental reviews.[70]

142. The Project's site-specific impacts are reasonably foreseeable because the Corps has observed them for more than a century. During this period, the Corps has witnessed firsthand the impacts of: constructing an extensive array of river training structures; repeated and extensive dredging and dredged spoil disposal; and placing revetment on some 60 percent of the banks of the Middle Mississippi River. The Corps also has extensive experience examining how river training structures can shift the locations where repetitive dredging may be required.

143. Because site specific impacts of the Project are reasonably foreseeable, the FSEIS should have analyzed them. Contrary to NEPA, it failed to do so.

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67 Salant, N.L., J.C. Schmidt, P. Budy, and P.R. Wilcock. 2012. Unintended consequences of restoration: loss of riffles and gravel substrates following weir installation. *J Environ Manage* 109:154-63.

68 Palmer, M.A., H.L. Minninger, E. Bernhardt. 2010. River restoration, habitat heterogeneity and biodiversity: a failure of theory or practice? *Freshwater Biology* 55 (Suppl. 1), 205–222.

69 *Colorado Environmental Coalition v. Office of Legacy Management*, 819 F.Supp.2d. at 1209 (future site-specific mining activity was reasonably foreseeable at the lease stage because mining had previously taken place on the same public lands and thus must be reviewed at the programmatic leasing stage).

70 *Kern v. U.S. Bureau of Land Mgmt*., 284 F.3d at 1072.

2. The FSEIS Lacks Scientific Integrity

144. The FSEIS violates NEPA because it lacks scientific integrity. "Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA."[71] As noted, the FSEIS must be based on "high quality" science and "insure professional integrity" in its analysis.[72] And, if information essential to a reasoned choice among alternatives is not available, the Corps must obtain it unless the cost of doing so would be "exorbitant."[73]

145. An EIS must utilize "quantified or detailed information" when analyzing impacts.[74] It may not rely "on conclusory statements unsupported by data, authorities, or explanatory information."[75] Accordingly, the EIS must supply supporting data and authorities, and explain how and why it has drawn the conclusion it has reached.

146. The Corps must also candidly disclose the risks of its proposed action and respond to adverse opinions held by respected scientists:[76]

> "'Where scientists disagree about possible adverse environmental effect, the EIS must inform decision-makers of the full range of responsible opinion on the environmental effects.' Where the agency fails to acknowledge the opinions held by well respected scientists concerning the hazards of the proposed action, the EIS is fatally deficient."[77]

147. It is not sufficient to include the statements of independent experts, including the IEPR Panel, in an appendix or other secondary document. The expert comments must be

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[71] 40 C.F.R. § 1500.1(b).
[72] 40 C.F.R. § 1502.24 ("Agencies shall insure professional integrity, including scientific integrity, of the discussions and analysis in environmental impact statements"); *Earth Island Inst. v. U.S. Forest Service*, 442 F.3d 1147, 1159-60 (9th Cir. 2006) (quoting 40 CFR §1502.24).
[73] 40 C.F.R. § 1502.22.
[74] *Neighbors of Cuddy Mountain v. U. S. Forest Service*, 137 F.3d at 1379; *Ecology Center v. Castaneda*, 574 F.3d 652, 666 (9th Cir. 2009) (requiring "quantified or detailed data"); *Natural Resources Defense Council v. Callaway*, 524 F.2d at 87.
[75] *Id*.
[76] *Seattle Audubon Soc'y v. Moseley*, 798 F.Supp. at 1482 (citing *Friends of the Earth v. Hall*, 693 F.Supp. at 934, 937.
[77] *Friends of the Earth v. Hall*, 693 F. Supp. at 934 (citations omitted).

included and appropriately responded to in the impacts section of the FSEIS.[78]

148. The FSEIS fails to meet each of these important and longstanding NEPA requirements. First, it lacks scientific integrity because it fails to evaluate critical information and opposing scientific opinion in the following respects:

(a) Flood Heights and Flood Response

149. The FSEIS' claim that river training structures do not increase flood heights lacks scientific credibility. Plaintiffs provided the Corps with a list of scientific references that included approximately 500 pages of scientific research linking river training structures to elevated flood risk along with copies of many of those studies, buttressed by two authoritative affidavits by a leading scholar on this topic, Professor Nicholas Pinter, currently the Shlemon Chair in Applied Geology at the University of California, Davis. As discussed in paragraphs 179-188 below, both Professor Pinter and Professor Robert E. Criss of the Department of Earth and Planetary Sciences at Washington University in Saint Louis have published comprehensive studies confirming that by narrowing the river channel, river training structures demonstrably -- as shown by decades of river height records -- raise the river's height, both where the channel is narrowed, and for miles upstream where the river's flow is backed up.

(b) Sediment Loading, Sediment Transport, Hydrology and Hydraulics

150. The FSEIS lacks essential information on sediment loading, sediment transport, hydrology and hydraulics in the Middle Mississippi River. Yet understanding these factors is critical to achieving the Project's objective of maintaining navigation on the Middle Mississippi River through the sediment management practices of dredging and river training.

151. This omission was confirmed by the IEPR Panel, which concluded it could not "judge whether structures and dredging designs are based on robust science, data and engineering" because the Draft SEIS did not provide meaningful information on sediment load

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[78] *Id.*

and transport.[79] The IEPR Panel recommended that the Draft SEIS be revised to include:

- "Annual percentages and load from Missouri River and Upper Mississippi River."
- "Sediment properties for both bed load and suspended load – particle size, settling velocity, specific gravity, and fraction distribution within each particle size."
- "Annual volumes entering the MMR, temporarily and permanently deposited in the MMR, and exiting the MMR as compared to annual dredging load."
- "Relationship between channel conveyance, flood hydrographs (i.e., rising leg and falling leg), bed load, suspended sediment load, and sediment transportation."
- "Percentage of total bed load and suspended sediment load that is dredged."[80]

152. Despite these requests, the Corps refused to rectify these omissions in the FSEIS.

153. Scientific understanding of large river sediment transport and deposition has made great progress—documented in hundreds of published articles--since the 1976 EIS was finalized.[81] Plaintiffs and other asked the Corps to evaluate this extensive body of science in the FSEIS. As the IEPR Panel noted, a "[s]trong working knowledge of sediment characteristics is necessary to design and construct effective regulating structures and conduct annual dredging programs."[82] The Corps refused to address this body of science in the FSEIS.

154. The IEPR Report also concluded that "the SEIS has little information on the hydraulic and hydrologic engineering data for the MMR."[83] While the 1976 EIS contained data available then – over 40 years ago – that information is obsolete because both the hydraulics and

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[79] IEPR Final Report at 9
[80] *Id*.
[81] *E.g.*, DeHaan, H.C. 1998, *Large River Sediment Transport and Deposition: An Annotated Bibliography*, U.S. Geological Survey, Environmental Management Technical Center, Onalaska, Wisconsin, April 1998, LTRMP 98-T002. 85 pp. (identifying more than 250 scientific studies addressing large river sediment transport and deposition published since 1976): Pierre Y. Julien and Chad W. Vensel, Department of Civil and Environmental Engineering Colorado State University, *Review of Sedimentation Issues on the Mississippi River*, DRAFT Report Presented to the UNESCO: ISI, November 2005 (referencing more than 100 studies published between 1979 and 2005).
[82] IEPR Final Report at 9.
[83] *Id*. at 5.

the hydrology of the Middle Mississippi River have changed significantly since 1976:

> "Generally there has been an increase in cross sectional area, hydraulic depth, conveyance and volume throughout the period of record (Little et al. 2016). The Regulating Works Project has contributed to these changes, although it is uncertain to what extent." FSEIS at 55-56.

155. In sum, the FSEIS lacks scientific credibility because it omits essential data and analysis on current sediment loading, sediment transport, hydrology, and hydraulics.

(c) Main Channel Border Habitat Model

156. The FSEIS's assessment of main channel border habitat is based on an incomplete border habitat model. The FSEIS states:

> "Actual acreages affected would not be known until the main channel border habitat model is completed and is subsequently used to determine impacts on an ongoing site-by-site basis."[84]

157. This failing is particularly critical since the FSEIS recognizes that the Preferred Alternative will cause significant adverse impacts to main channel border habitat, adding to the already extremely significant loss of 34.85% of this habitat in the Middle Mississippi River.[85]

158. This model should have been completed, certified, and used to assess impacts in the DSEIS because it is essential to a reasoned choice among alternatives. The Corps was required to provide this information because its cost was not "exorbitant."[86]

159. The Corps' untested border habitat model should not have been used in the FSEIS because it had not been finalized, independently reviewed, and certified. The Corps' own guidance clearly requires certification of the new model before it may be used:

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[84] FSEIS at 190, n. 23.
[85] *See* FSEIS at 190 (from 1976 to 2014, the amount of unstructured main channel border habitat in the MMR decreased from 19,800 acres to 12,900; river training structure construction affected approximately 6,900 acres of main channel border habitat during this period).
[86] 40 C.F.R. § 1502.22.

> "Use of *certified* or approved models for all planning activities is *mandatory*. This policy is applicable to all planning models currently in use, models under development and new models . . . . The goal of certification/approval is to ensure that Corps planning products are theoretically sound, compliant with Corps policy, computationally accurate, based on reasonable assumptions regarding the availability of data, transparent, and described to address any limitations of the model or its use."

EC 1105-2-412, Assuring Quality of Planning Models at paragraph 6 (emphasis added). Similarly, use of the new model required completion of the Corps' peer review process, which likewise was not completed. *See, e.g.*, EC 1105-2-408 and EC-1105-2-410.

(d) Nineteen Mile Modeled Reach

160. The Nineteen-Mile Reach of the Middle Mississippi River was modeled by the Corps to provide a basis for its analysis of the Project's impacts. However, the FSEIS lacks critical information on the model used to assess this reach, and on the physical and biological characteristics of this reach. For example, the FSEIS fails to confirm that the model has been independently reviewed and certified, as required by the Corps' own guidelines EC 1105-2-412, EC 1105-2-408, and EC-1105-2-410. This omission invalidates the FSEIS because this model is the basis for the Corps' entire impacts analysis.

161. Although Plaintiffs requested the following information essential to assessment of the adequacy and accuracy of the model, the Corps failed to provide any of it:

1. The number and types of river training structures that are in the modeled reach.
2. The total length of river training structures in the modeled reach.
3. The height and widths of the river training structures in the modeled reach.
4. The information in 1-3 should also be provided for each different type of river training structure (*e.g.*, wing dike, bendway weir, chevron, other).
5. The linear feet and acreage of natural main channel border habitat in the modeled reach, and the linear feet and acreage of wetlands both in the main channel border habitat and in the adjacent floodplain.

6. The baseline depth data for the modeled reach.
7. The baseline flow patterns in the modeled reach.
8. The locations and areal extent of areas within the modeled reach that require repetitive dredging.
9. The length and width of revetment in the modeled reach.
10. Sufficient details concerning the model used to allow an independent reviewer to assess the adequacy of the model used.

(e) Independent External Peer Review Panel Comments

162. The FSEIS fails to address the IEPR Panel's objections; indeed, the DSEIS did not even mention the Panel. It is not sufficient to include the Panel's statements in a separate report or Appendix, as opposing expert views must be included and responded to in the EIS itself.[87] The Corps' failure to address the Panel's concerns renders the FSEIS "fatally deficient."[88]

163. The IEPR Panel made the following findings, each of which demonstrates that the FSEIS lacks essential information needed to assess Project impacts:

1. "It is not clear why impacts of future river training structure construction and the associated compensatory mitigation requirements were not evaluated in more detail with respect to specific locations in the MMR."
2. "The project description for the proposed action does not describe the decision-making process that will be employed for identifying new river training structure construction sites."
3. "The SEIS does not clearly describe the project construction features within the main report such that a link between the project and the level of impacts can be easily compared."
4. "A lack of detailed information on the sediment load entering the MMR limits the

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[87] *Friends of the Earth v. Hall*, 693 F. Supp. at 934 (citations omitted).
[88] *Id.*

understanding of the overall effort needed to achieve the project's stated purpose of providing an economical, regulated, and dredged navigation channel."[89]

(f) Independent Peer Review Panel Report and Membership

164. The existence of the IEPR Panel has not ensured the scientific credibility of the FSEIS for at least four reasons. First, as noted the FSEIS does not address the issues raised by the IEPR Panel.

165. Second, the FSEIS does not include the IEPR Panel Report within the body of the FSEIS, as required. *Friends of the Earth v. Hall*, 693 F.Supp. at 934.

166. Third, even the IEPR Report itself was incomplete, as the Panel was provided only partial information. Consequently, it did not meaningfully "assess the 'adequacy and acceptability of the economic, engineering, and environmental methods, models, and analyses used' (EC 1165-2-214; p. D-4) for the MMR Regulating Works SEIS documents" as envisioned in the Corps' stated Objectives for the Panel.[90] Nor did it: "identify, explain, and comment upon assumptions that underlie all the analyses;" "evaluate the soundness of models, surveys, investigations, and methods;" or "evaluate whether the interpretations of analysis and the conclusions based on analysis are reasonable." As a result, the Final IEPR Report contains just five partial pages of substantive results and discussion,[91] and cites only three references.[92]

167. *Critically*, the IEPR Panel was provided only the *Corps'* one-sided views on river training structures and flood stage in the 30-page Appendix A (Effects of River Training Structures on Flood Levels) of the FSEIS.[93] The Corps failed to give the Panel the extensive scientific documentation that Plaintiffs had provided the Corps over the past six years on this vital subject, including a list of scientific references, approximately 500 pages of scientific research

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[89] Final IEPR Report.
[90] Final IEPR Report, Appendix C.
[91] *Final* IEPR Report at 5-9.
[92] *Final* IEPR Report at 10.
[93] *Final* IEPR Report, Appendix C at C-6.

linking river training structures to elevated flood risk, and two authoritative affidavits by Professor Pinter demonstrating that river training structures affect flood heights and providing a point-by-point rebuttal of the Corps' erroneous conclusions on this issue.

168. Fourth, the IEPR Panel lacks meaningful independence from the Corps. Collectively, the Panel's members have worked directly for the Corps for 63 years. Each member has lengthy Corps employment: one for 31 years; another 19 years; and the third 13 years. Each had served the Corps on previous IEPR Panels. This extensive history of Corps employment disposes Panel members to agreeing with Corps models, methodologies, and evaluations. This problem is amplified by the fact there were only three reviewers on the IEPR Panel – despite the Project's enormous scope and impacts, and significant scientific controversies. Consequently, the Panel lacked the scientific objectivity and expertise needed to independently review the DSEIS.

169. Because of the IEPR Panel's inherent bias, Plaintiffs asked the Corps to (1) initiate a National Academy of Sciences study on river training structures and flood heights, and (2) convene a new, larger, and more Independent External Peer Review Panel to evaluate the Draft SEIS and the FSEIS. The Corps refused to do so.

(g) Economic Data and Analyses

170. The FSEIS provides only the most rudimentary, general, and unsupported analysis of the potential cost of future river training structure construction and mitigation. *See* FSEIS, Appendix C, at Attachment 1. The FSEIS states it "does not include a detailed economic evaluation of the Regulating Works Project," despite the fact the Preferred Alternative recommends extensive new, ongoing construction for at least 17 years. FSEIS at 37. Instead, it defers indefinitely disclosure of the costs of the Project's construction, dredging and mitigation. *Id.*

171. This lack of a meaningful economic analysis is particularly problematic since the FSEIS claims that new river training structure construction is needed to *reduce the costs* of maintaining the navigation channel. Without a detailed assessment of project costs and benefits, it is not possible to determine whether this stated goal would be met. To assess the benefits and

costs of the Preferred Alternative, Plaintiffs asked the Corps to assess the following information:

(1) The projected future costs of required dredging for each alternative evaluated in the FSEIS, and each of the other highly reasonable alternatives identified in these comments, calculated for the life of the Project.

(2) The construction and full life cycle maintenance costs of river training structures that would be constructed under the New Construction Alternative;

(3) A meaningful assessment of mitigation costs for each alternative, including the costs associated with monitoring (as required by law), adaptive management and contingency planning should the mitigation not achieve ecological success criteria as required by law;

(4) The costs associated with increased risks of upstream or nearby levee failures should new river training structure construction increase flood heights.

(5) The value of the ecosystem services that will be lost under each alternative.

172. Notwithstanding Plaintiffs' request, the Corps failed to provide this essential information. Because of the Preferred Alternative's extensive construction of new river training structure projects, Plaintiffs asked that the FSEIS include a National Economic Development (NED) analysis to compare alternatives and evaluate the full range of ecosystem functions that would be lost under the Preferred Alternative. The Corps failed to provide this analysis.

173. In sum, the FSEIS lacks scientific credibility since it omits vital economic data.

3. The FSEIS Fails to Accurately Establish Baseline Conditions

174. The FSEIS violates NEPA because it fails to accurately establish and consider baseline conditions. It is settled law that:

> "Without establishing the baseline conditions . . . there is simply no way to determine what effect the [action] will have on the environment, and consequently, no way to

comply with NEPA."[94]

175. Properly establishing baseline conditions requires accurate and comprehensive data. Without baseline data, "an agency cannot carefully consider information about significant environment impacts. Thus, the agency fails to consider an important aspect of the problem, resulting in an arbitrary and capricious decision."[95] If information that is essential for making a reasoned choice among alternatives is not available, the Corps must obtain that information unless the costs of doing so would be "exorbitant."[96]

176. Properly establishing baseline conditions also requires a clear description of "how conditions have changed over time and how they are likely to change in the future without the proposed action" to determine whether additional stresses will push this system over the edge.[97] This is particularly important in situations, like those in the Middle Mississippi River, where the environment has already been greatly modified by human activities because it "is often the case that when a large proportion of a resource is lost, the system nears collapse as the surviving portion is pressed into service to perform more functions."[98]

177. The FSEIS fails to meet these NEPA requirements because it:

(a) Lacks fundamental baseline data on flood heights. Notably, the FSEIS

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[94] *Half Moon Bay Fishermen's Mktg. Ass'n. v. Carlucci*, 857 F.2d 505, 510 (9th Cir.1988). As a result, the entire DSEIS is inadequate as a matter of law. *E.g., Friends of Back Bay v. U.S. Army Corps of Engineers*, 681 F.3d 581, 588 (4th Cir. 2012) (an EIS fails to comply with NEPA if it relies on a "material misapprehension of the baseline conditions.")

[95] *Northern Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1083, 1085 (9th Cir. 2011) (the EIS did "not provide baseline data for many of the species" of concern and thus "did not take a sufficiently 'hard look'" to fulfill its NEPA-imposed obligations for the impacts as to these species).

[96] 40 C.F.R. § 1502.22. *See also, Half Moon Bay Fishermen's Mktg. Ass'n. v. Carlucci*, 857 F.2d at 510; *Northern Plains Res. Council v. Surface Transp. Bd.*, 668 F.3d at 1083; *Gifford Pinchot Task Force v. Perez*, No. 03:13-CV-00810-HZ, 2014 WL 3019165, at *27-29 (D. Or. July 3, 2014); *Idaho Conservation League v. U.S. Forest Serv.*, No. 1: 11 –CV–00341 -EJL, 2012 WL 3758161, at *16 (D.Idaho Aug. 29, 2012) (analyzing an EA, ruling that the agency needed to conduct a baseline study and actual investigation of groundwater before reaching a conclusion regarding the impacts of a mining project on groundwater).

[97] CEQ, *Considering Cumulative Effects Under the National Environmental Policy Act* (January 1997) at 41.

[98] *Id.*

improperly dismisses extensive and highly credible information on flood level increases and on fundamental changes to the way the Middle Mississippi River responds to flood events.[99] The Corps' refusal to acknowledge the validity of this information, and account for these changes—and the role of river training structures in creating these dangerous conditions—taints the entire FSEIS.

(b) Lacks fundamental baseline data on sedimentation rates in the Project area.

(c) Lacks fundamental baseline data on fish and wildlife species, including migratory species, and their critical habitat needs, in the Project area.

(d) Lacks fundamental baseline data on plant species, including wetland plant species, in the Project area.

(e) Lacks fundamental baseline data on vitally important habitat types, including main channel border habitat, braided river habitat, wetland habitat, and floodplain habitat, in the Project area.

(f) Lacks fundamental baseline data on the potential impacts of channel cutoffs caused by the Project's river training structures. For example, the Project poses the potential for a channel cut off at Dogtooth Bend. For this location, the DSEIS stated only that "[a]nother site that has shown the potential of a channel cutoff is at Dogtooth Bend at river mile 33. A cutoff at Dogtooth Bend would reduce the length of the MMR by approximately 16 – 18 miles. The consequences of a channel cutoff at Dogtooth Bend would be similar to those at Thompson Bend." DSEIS at 13. Plaintiffs responded that the impacts of such a change are significant and should be analyzed in far more depth, based on a 2016 study by Olson and Morton, which Plaintiffs attached to their comments. Notwithstanding Plaintiffs' request, no further analysis appeared in the FSEIS.

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[99] *See* paragraphs 179-188 of this Complaint.

(g) The discussion of baseline conditions fails to discuss and account for the significant decline in the ecological health of the Mississippi River and the role of the Regulating Works Project in that decline. Rather than providing this analysis, the FSEIS merely references past studies documenting this decline.[100]

178. Due to these omissions, the FSEIS fails to take the "hard look" NEPA requires.

4. The FSEIS Fails to Adequately Evaluate Impacts on Flooding

179. The FSEIS fails to adequately evaluate the impacts of the Project and its river training structures on flood heights. Instead, it rejects the extensive body of scientific evidence demonstrating that such structures increase flood heights and have fundamentally altered and exacerbated the way the Middle Mississippi River responds to high water events.

180. The Corps' conclusion that river training structures do not affect flood heights has been conclusively disproved by research led by Nicholas Pinter, Ph.D., currently the Shlemon Chair in Applied Geology at the University of California Davis. In a series of exchanges published in the *Journal of Hydraulic Engineering* and elsewhere, Dr. Pinter has specifically rebutted both the methodology and the conclusions in the Watson studies, which were relied on by the Corps to reach its faulty conclusion.

181. Dr. Pinter's research shows that river training structures increase flooding. These impacts are cumulative—as more structures are placed in the river, the flood stages increase:

> On the Upper Mississippi River, for example, stages increased more than four inches for each 3,281 feet of wing dike built within 20 RM (river miles) downstream. . . . Our study demonstrated that the presence of river training structures can cause large increases in flood stage. For example, at Dubuque, Iowa, roughly 8.7 linear miles of downstream wing dikes were constructed between 1892 and 1928, and were associated with a nearly five-foot increase in stage. In the area affected by the 2008 Upper Mississippi flood, more than

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[100] *See* FSEIS at 199-200 (citing prior studies rather than providing an independent discussion).

six feet of the flood crest is linked to navigational and flood-control engineering."[101]

182. Plaintiffs' DSEIS comments urged the Corps to discuss the overwhelming scientific consensus that river training structures increase flood heights, directly refuting the Corps' assertions that river training structures do not affect flood levels. There currently is intense public opposition to constructing new river training structures, due to their flood risks.[102]

183. Science shows that river training structures, constructed by the Corps to reduce dredging costs, have significantly increased flood levels by up to 15 feet in some locations and 6 to 10 feet over broad stretches where these structures are prevalent.[103] Independent scientists have determined that the more than 40,000 feet of "wing dikes" and "bendway weirs" constructed by the Corps in the Mississippi River during the three years prior to the great flood of 1993 contributed to record crests in 1993, 1995, 2008, and again in 2011. Even studies commissioned by the St. Louis District and cited in the FSEIS (*e.g.*, Watson *et al.*, 2013a, FSEIS at 50 and Appendix A) find statistically significant increases in flood stages at these locations.

184. Plaintiffs provided extensive documentation of the indisputable correlation between river training structures and increased stage height and resultant flooding to the Corps before it published the DSEIS, but this documentation was ignored. For example, Robert E.

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[101] Declaration of Nicholas Pinter, Ph.D. in Support of Plaintiffs' Motion for Preliminary Injunction filed July 3, 2014 in *National Wildlife Federation, et al. v. United States Army Corps of Engineers, et al.*, Case 3:14-00590-DRH-DGW at ¶¶ 19, 29; Reply Declaration of Nicholas Pinter, Ph.D. in Support of Plaintiffs' Motion for Preliminary Injunction filed August 13, 2014 in *National Wildlife Federation v. United States Army Corps of Engineers*, S.D.Ill Case 3:14-00590-DRH-DGW at ¶ 24.

[102] *See, e.g.*, the extensive public scoping comments for this Project, the extensive public comments on the Draft SEIS, and the strong opposition by local community members to the revised Grand Tower Environmental Assessment expressed at the February 19, 2014 and March 9, 2016 public hearings on the Grand Tower project.

[103] Pinter, N., A.A. Jemberie, J.W.F. Remo, R.A. Heine, and B.A. Ickes, 2010, Empirical modeling of hydrologic response to river engineering, Mississippi and Lower Missouri Rivers. River Research and Applications, 26: 546-571; Remo, J.W.F., N. Pinter, and R.A. Heine, 2009, The use of retro- and scenario- modeling to assess effects of 100+ years river engineering and land cover change on Middle and Lower Mississippi River flood stages. Journal of Hydrology, 376: 403-416. Declaration of Nicholas Pinter, Ph.D. in Support of Plaintiffs' Application for Temporary Restraining Order filed September 5, 2014 in *National Wildlife Federation, et al. v. United States Army Corps of Engineers, et al.*, S.Dist.Ill. Case 3:14-cv-00590-DRH-DG@ at ¶ 29.

Criss, Ph.D., a Professor in the Department of Earth and Planetary Sciences at Washington University in St. Louis, warned the Corps that:

> "The consequences of current management strategy on floodwater levels are clearly shown by data from multiple gauging stations on the Middle Mississippi River (Figures). The Chester and Thebes stations were selected as they are the closest stations to the project area that have long, readily available historical records (USGS, 2016). *These figures conclusively document that floodwater levels have been greatly magnified along the Middle Mississippi River, in the timeframe when most of the in-channel navigational structures were constructed. If these structures are not the cause, then we are left with no explanation for this profound, predictable effect*.[104]

185. Dr. Criss pointed out further that measurements on the Mississippi River at St. Louis and on the Missouri River at Herman "document similar damaging and incontestable trends for other river reaches managed in the same manner."[105]

186. A 2016 *Journal of Earth Science* study co-authored by Dr. Criss ("Criss and Luo 2016") highlights the cumulative impact of the Corps' excessive channelization of the Middle Mississippi River. That study concludes that the Middle Mississippi River has been so constricted by river training structures that it now floods more frequently and severely:[106]

> "Ehlmann and Criss (2006) proved that the lower Missouri and middle Mississippi Rivers are becoming more chaotic and unpredictable in their time of flooding, height of flooding, and magnitude of their daily changes in stage. This chaotic behavior is primarily the result of extreme channelization of the river, and its isolation from its floodplain by levees (e.g.,

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[104] Comments on Draft Environmental Assessment for Grand Tower Regulating Works Project by Robert E Criss, Washington University, March 3, 2016 (emphasis added).
[105] *Id.*
[106] Robert E. Criss, Mingming Luo, *River Management and Flooding: The Lesson of December 2015–January 2016, Central USA*, Journal of Earth Science, Vol. 27, No. 1, p. 117–122, February 2016 ISSN 1674-487X (DOI: 10.1007/s12583-016-0639-y) (emphasis added).

Criss and Shock, 2001; GAO, 1995; Belt, 1975). *The channels of the lower Missouri and middle Mississippi Rivers are only half as wide as they were historically*, along a combined reach exceeding 1,500 km, as clearly shown by comparison of modern and historical maps (*e.g*., Funk and Robinson, 1974).

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The aftermath of storm Goliath [which led to the December 2015 floods] provides another example in an accelerating succession of record floods, whose tragic effects have been greatly magnified by man. . . . [Although] only a few percent of the watershed above St. Louis received truly heavy rainfall during this event; *the river rose sharply because the water simply had nowhere else to go*. . . . *Forthcoming calls for more river management, including higher levees and other structures, must be rejected*. Additional "remediations" to this overbuilt system will only aggravate flooding in the middle Mississippi Valley (see Walker, 2016).[107]

187. Appendix A to the FSEIS purports to critique Criss and Luo 2016, but it does not address its content, and instead focuses on a single locality (Chester) scarcely mentioned in the study. The discussion of this single locality (Chester) inappropriately compares the assessed winter flood with prior, warm weather floods, and rising limb data with falling limb data.

188. The FSEIS's failure to acknowledge and account for the significant increases in flood heights and the fundamental changes to the way the Middle Mississippi River responds to floods caused by river training structures renders the FSEIS deeply, and dangerously, flawed.

5. The FSEIS Fails to Adequately Evaluate Impacts to Main Channel Border Habitat

189. Despite recognizing that the Preferred Alternative will cause the loss of at least

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[107] Robert E. Criss, Mingming Luo, *River Management and Flooding: The Lesson of December 2015–January 2016, Central USA*, Journal of Earth Science, Vol. 27, No. 1, p. 117–122, February 2016 ISSN 1674-487X (DOI: 10.1007/s12583-016-0639-y) (emphasis added).

"1,100 acres (8%) of the remaining unstructured main channel border habitat,"[108] the FSEIS fails to address the cumulative ecological implications of this loss in light of the already highly significant losses of main channel border habitat from river training structures to date. [109]

190. The FSEIS fails to provide an accurate assessment of the areal extent and locations of adverse impacts to main channel border habitat for at least four reasons:

(1) The FSEIS assessment that 1,100 (8%) of the remaining unstructured main channel border habitat will be lost is based on an incomplete border habitat model. FSEIS at 190, n. 23 ("Actual acreages affected would not be known until the main channel border habitat model is completed and is subsequently used to determine impacts on an ongoing site-by-site basis."). This model should have been completed, certified, and used to assess impacts before the DSEIS was circulated.

(2) The incomplete main channel border habitat model appears to have been inappropriately applied to the 19 Mile Modeled Reach.

(3) Contrary to the FSEIS' claim that such impacts total 1100 acres,[110] Appendix C to the FSEIS shows "the impact of all construction necessary to achieve the maximum dredging reduction. . .was 1774 acres of main channel border."[111]

(4) The FSEIS fails to disclose and evaluate the specific locations and lineal extent of shoreline of such losses, which is needed to determine whether significant losses will occur in areas of critical importance to key species or where natural main channel border habitat has already been significantly compromised.

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[108] FSEIS at 35.
[109] The 1,100 acre loss would constitute 8.53% of the 12,900 acres of main channel border habitat remaining. But this loss must be added to the previous loss of 6,900 acres of such habitat due to river training structures from 1976 to 2014—an additional 34.85% loss. FSEIS at 190.
[110] FSEIS, Appendix C at C-2.
[111] FSEIS, Appendix C, Attachment 1 (Methodology to Estimate Remaining Construction and Associated Impacts") at 3.

191. The FSEIS fails to evaluate the ecological harm from these losses of habitat. That border habitat is critical to many species, including fish, amphibians, crustaceans, waterfowl, shorebirds and mammals. Yet, the FSEIS does not reveal the Project's impacts on these species:

(1) The FSEIS fails to describe even the most basic ecological characteristics of this habitat, stating only that it is "defined as areas shallower than LWRP -10 without river training structures." FSEIS at 190. But this habitat has important ecological characteristics:

> "On the MR there are 87,833 acres of main channel border habitat. . . . The main channel border is a primary habitat for freshwater mussels, and the basis for the commercial mussel industry. Furbearers use this area as they do side channels and backwaters for feeding, and the banks occasionally serve as den sites. Shore and wading birds use the shallow waters within the main channel border for feeding. Some waterfowl use can also be noted, mainly by wood ducks and mallards. . . . ."[112]

Loss of this habitat would have ecological impacts far beyond the benthic organisms and fisheries mentioned in the FSEIS. *Id*. at 96 and 99. The FSEIS failed to evaluate the important habitat types within the main channel border, and assess the Project's adverse impacts to the fish and wildlife species that utilize those habitats.

(2) The FSEIS also does not identify the vast number of fish and wildlife species that utilize the main channel border, and instead provides only a short list of the "most commonly encountered" native and non-native species. Consequently, the FSEIS does not provide a meaningful assessment of the direct, indirect, and

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[112] Draft Environmental Impact Statement, Second Lock at Locks and Dam No. 26 (replacement) Mississippi River, Alton, Illinois and Missouri (St. Louis District) 1998 at DEIS-65.

cumulative adverse impacts to the full array of fish and wildlife resources from the significant additional losses to main channel border habitat.[113]

(3) The FSEIS instead focuses its analysis on changes in fish densities surrounding river training structures and impacts of entrainment during dredging. It fails to discuss or reference an important 2004 study which shows that in the Middle Mississippi River, main channel border habitat is a preferred habitat for the federally endangered Pallid sturgeon.[114] Plaintiffs provided a copy of this study to the Corps in their comments on the Draft SEIS.

(4) The FSEIS fails to discuss impacts to reptiles that occupy main channel border habitat, even though a 2016 study shows that "[s]hallow, low-velocity habitat seems most important to turtles" in the Middle Mississippi River and that "smooth softshell turtles used open side channels and unstructured main-channel borders most often."[115] The FSEIS fails to account for the cumulative impacts of the loss of an additional 8.53% of main channel border habitat on top of the already extremely significant loss of 34.85% of main channel border habitat in the Middle Mississippi River. As a result, the FSEIS does not satisfy NEPA's requirement to "determine the magnitude and significance of the environmental consequences" of the preferred alternative in the context of the cumulative effects of other past, present, and future actions.[116]

192. Even the minimal information provided in the FSEIS demonstrates that the

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[113] FSEIS at 96, 99.

[114] Hurley, Keith L., Sheehan, Robert J., Heidinger, Roy C., Wills, Paul S. and Clevenstine, Bob. "Habitat Use by Middle Mississippi River Pallid Sturgeon." (July 2004), published in Transactions of the American Fisheries Society, Vol. 133, Issue 4 (July 2004) at doi: 10.1577/T03-042.

[115] Braun, Andrew P., Phelps, Quinton E. "Habitat Use by Five Turtle Species in the Middle Mississippi River." Chelonian Conservation and Biology June 2016: Vol. 15, Issue 1, pp. 62-68 doi: 10.2744/CCB-1156.1 (available at http://www.bioone.org/doi/abs/10.2744/CCB-1156.1).

[116] CEQ, *Considering Cumulative Effects Under the National Environmental Policy Act* (January 1997) at 41 (emphasis added).

Project-induced losses constitute a "significant adverse effect." According to the FSEIS:

> "Although these unstructured main channel border habitats are part of a river system that is highly modified compared to its original state, they likely more closely resemble some of the habitats of the historic MMR. The continued conversion to structured habitat is expected to result in the continued functional change of the river from the unconfined, shifting, meandering river that was the historic condition, toward a river dominated by the deep, high velocity habitat of the main channel surrounded by structured main channel border habitat. This analysis also provides insight into the magnitude of the potential adverse effect to fish movement described above. *Areas of unstructured main channel border habitat are more likely to provide the necessary movement and migration pathways required by the MMR fish community. Overall, the continued conversion to structured main channel border habitat is expected to have a significant adverse effect on the MMR fish community* and the District has concluded that this would warrant compensatory mitigation."

FSEIS at 190-191 (emphasis added).

193. As the FSEIS concedes, this level of impact to main channel border habitat is "significant on technical, institutional, and public merits." FSEIS at 36. The full suite of adverse impacts from this significant loss of main channel border habitat must be assessed under NEPA, but was not in the FSEIS.

6. The FSEIS Fails to Evaluate Key Information Concerning Side Channels

194. Despite its recognition of the importance of side channel habitat in the Middle Mississippi River, and the threat posed by greater isolation from the main channel caused by low to moderate river discharges (FSEIS at 204-205), the FSEIS fails to assess the threat of such disconnection caused by the Project's river training structures, which cause lower water levels (due to increased river velocity) during low flow conditions.

195. The FSEIS also fails to evaluate the impacts of climate change in conjunction with the Project on the Middle Mississippi River's side channels at both low and high flow conditions

despite the overwhelming science confirming that climate change is having an extremely significant impact on the Middle Mississippi River and its vital side channels.

7. The FSEIS Fails to Evaluate Impacts to Braided Channel, Cross-Over, Mid-Channel Bar, and Backwater Habitat

196. The FSEIS fails to assess the Project's impacts on braided channels, cross-over habitat, mid-channel bars, and backwater habitat. These diverse habitats are essential to many imperiled fish and wildlife species. For example, the Corps stated in its Draft Environmental Assessment for the Eliza Point/Greenfield Bend Regulating Works Project (2013) that Pallid sturgeon "are adapted to braided channels, irregular flow patterns, flooding of terrestrial habitat, extensive microhabitat diversity, and turbid waters (Mayden and Kahajda 1997)." *Id*. And, it admitted that that project's river training structures would cause the loss of "272.2 average annual habitat units for the shovelnose sturgeon," a species closely related to the river's endangered Pallid sturgeon. *Id*. at 57. Yet the FSEIS fails to address the Project's impacts on these specialized habitats.

8. The FSEIS Fails to Evaluate Impacts to Wetlands

197. Despite its recognition that Middle Mississippi River side channels can function as wetlands and that the Middle Mississippi River National Wildlife Refuge is managed to provide wetlands for migratory birds, the FSEIS provides no analysis of the Project's impacts on vegetated and forested wetlands, including wetlands located in main channel border habitat and in the Mississippi River floodplain**.**

9. The FSEIS Fails to Adequately Evaluate Impacts to Species Listed Under the Federal Endangered Species Act

198. The FSEIS violates NEPA because it fails to adequately evaluate the impacts to species listed under the Federal Endangered Species Act (ESA), 16 U.S.C. section 1531 et seq. For example, the FSEIS's analysis of main channel border habitat, which is used by the federally endangered Pallid sturgeon, ignores a 2004 study that shows that in the Middle Mississippi River,

main channel border habitat is a preferred habitat for this species.[117] Although Plaintiffs provided this study to the Corps, the FSEIS does not discuss or even reference it.

199. The only discussion of listed species in the FSEIS is a summary conclusion that there will be no impacts for species listed prior to 2000 other than those stated in a 17-year old Biological Opinion. A Biological Assessment for species listed after 2000 is provided at FSEIS Appendix B. But as a matter of law, preparation of a Biological Assessment under the ESA cannot be substituted for NEPA analysis of the impact of the Project and proposed alternatives on listed species. The Corps' legal obligations under the ESA and NEPA are entirely separate and apply fundamentally different standards,[118] for "there can be a significant impact on a species even if its existence is not jeopardized."[119]

10. The FSEIS Fails to Meaningfully Evaluate Impacts to Fisheries

200. The FSEIS fails to evaluate the Project's impacts on most fish species that inhabit the Project area, and therefore understates the impacts of the Preferred Alternative, rendering the FSEIS inadequate. Some 144 species of fish representing 22 families are likely found in the Project area.[120] However, the FSEIS does not provide information on most of these species, and

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[117] Hurley, Keith L., Sheehan, Robert J., Heidinger, Roy C., Wills, Paul S. and Clevenstine, Bob. "Habitat Use by Middle Mississippi River Pallid Sturgeon." (July 2004), published in Transactions of the American Fisheries Society, Vol. 133, Issue 4 (July 2004) at doi: 10.1577/T03-042.

[118] *See Greater Yellowstone Coalition v. Flowers*, 359 F.3d 1257, 1275-76 (10th Cir. 2004) (recognizing that FWS' conclusion that the action is not likely to cause jeopardy does not necessarily mean the impacts are insignificant); *Makua v. Rumsfeld*, 163 F. Supp.2d 1202, 1218 (D. Haw. 2001) ("A FONSI . . . must be based on a review of the potential for significant impact, including impact short of extinction. Clearly, there can be a significant impact on a species even if its existence is not jeopardized."); *National Wildlife Federation v. Babbitt*, 128 F. Supp.2d 1274, 1302 (E.D. Cal. 2000) (requiring EIS under NEPA even though mitigation plan satisfied ESA); *Portland Audubon Society v. Lujan*, 795 F. Supp. 1489, 1509 (D. Or. 1992) (rejecting agency's request for the court to "accept that its consultation with [FWS under the ESA] constitutes a substitute for compliance with NEPA.").

[119] *Makua v. Rumsfeld*, 163 F. Supp.2d 1202, 1218 (D. Haw. 2001) ("A FONSI . . . must be based on a review of the potential for significant impact, including impact short of extinction. Clearly, there can be a significant impact on a species even if its existence is not jeopardized.")

[120] *See, e.g.*, November 18, 2013 Letter from the Office of Environmental Policy and Compliance, U.S. Department of the Interior to Col. Jeffery A. Anderson, Commander, Memphis District, U.S. Army Corps of Engineers (providing these numbers for the nearby project area of

does not provide any life cycle information for those species it does identify. The FSEIS does not provide any information on the impacts of river training structures on critical aspects of those life cycles.

201. For example, although the FSEIS acknowledges that the Preferred Alternative would cause a significant loss of main channel border habitat, it fails to evaluate the resulting impacts to fisheries resources, such as the endangered Pallid sturgeon, which are known to inhabit this habitat.[121]

202. The Corps' failure to adequately assess the Project's impacts on fisheries is due in part to its failure to obtain the Fish and Wildlife Coordination Act Report for the Project that is required by the Fish and Wildlife Coordination Act, 16 U.S.C. section 661 et seq. ("FWCA") as summarized in paragraphs 33-40 above and detailed in paragraphs 239-247 below.

11. The FSEIS Fails to Evaluate Impacts to Birds and Waterfowl

203. The FSEIS violates NEPA because it fails to evaluate the Project's impacts to birds and waterfowl found in the Project area. The FSEIS's only mention of migratory birds is a comment that the Middle Mississippi River National Wildlife Refuge is managed for migratory birds.[122] The word "waterfowl" does not appear anywhere in the FSEIS or its appendices. The FSEIS does include the terms of the 2000 Biological Opinion that relate to the federally endangered least tern, and the red knot is discussed in the Biological Assessment. However, as noted above, impacts to these imperiled species must also be evaluated in the FSEIS because "[c]learly, there can be a significant impact on a species even if its existence is not jeopardized."[123]

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the Corps' St. Johns Bayou New Madrid Floodway Project).

[121] Hurley, Keith L., Sheehan, Robert J., Heidinger, Roy C., Wills, Paul S. and Clevenstine, Bob. "Habitat Use by Middle Mississippi River Pallid Sturgeon." (Jul 2004), published in Transactions of the American Fisheries Society, Vol. 133, Issue 4 (July 2004) at doi: 10.1577/T03-042.

[122] FSEIS at 209.

[123] *Makua v. Rumsfeld*, 163 F. Supp.2d at 1218 ("A FONSI . . . must be based on a review of the potential for significant impact, including impact short of extinction. Clearly, there can be a significant impact on a species even if its existence is not jeopardized.").

204. The Middle Mississippi River is a central component of the Mississippi River Flyway, which is used by millions of migratory birds. Nearly half of the nation's migratory birds, and 40 percent of its waterfowl, migrate through the Mississippi River Flyway. One estimate suggests that 326 different species use the flyway.[124] The Department of the Interior has documented 193 species of migratory birds, and tens of thousands of migrating shorebirds and waterfowl, in or near the Project area.[125]

205. A meaningful assessment of impacts to migratory birds must account for direct, indirect, and cumulative impacts, including the cumulative impacts of climate change, which can significantly exacerbate the impacts on the many migratory species that utilize the Middle Mississippi River.

206. As recognized by the United Nations Environment Program and the Convention on the Conservation of Migratory Species of Wild Animals, migratory wildlife are particularly vulnerable to the impacts of climate change:

> "As a group, migratory wildlife appears to be particularly vulnerable to the impacts of Climate Change because [they] use[] multiple habitats and sites and . . . a wide range of resources at different points of their migratory cycle."[126]

207. Climate change impacts migratory birds in several ways, including changes in water regime, mismatches with food supply, habitat shifts, changes in prey range, increased storm frequency, and sea level rise.[127]

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[124] http://www.couleeaudubon.org/festival06_checklist.html (visited January 15, 2017).
[125] November 18, 2013 Letter from the Office of Environmental Policy and Compliance, U.S. Department of the Interior to Col. Jeffery A. Anderson, Commander, Memphis District, U.S. Army Corps of Engineers (providing these numbers for the nearby project area of the Corps' St. Johns Bayou New Madrid Floodway Project).
[126] UNEP/CMS Secretariat, Bonn, Germany, *Migratory Species and Climate Change: Impacts of a Changing Environment on Wild Animals* (2006) at 40-41 (available at http://www.cms.int/publications/pdf/CMS_CimateChange.pdf).
[127] *Id.* at 42-43.

208. The Corps could have obtained important information on the birds and waterfowl that use the Project area, including the migratory species, and on the Project's likely impacts on those species, had the Corps obtained a Fish and Wildlife Coordination Act Report for the Project, as required by law as summarized in paragraphs 33-40 above and detailed in paragraphs 239-247 below.

12. The FSEIS Fails to Evaluate Impacts to Amphibians and Reptiles

209. The FSEIS fails to evaluate impacts to amphibians and reptiles even though these species are known to inhabit areas the Project will impact. For example, a 2016 study shows that "[s]hallow, low-velocity habitat seems most important to turtles" in the Middle Mississippi River and that "smooth softshell turtles used open side channels and unstructured main-channel borders most often."[128] Yet the FSEIS never even mentions the words "amphibian" and "reptile" (except in referencing Plaintiffs' comments).

210. Evaluating the impacts of the Project on amphibians and reptiles is particularly important because these species are facing unprecedented risks of extinction. In the United States, the IUCN Red List of Threatened Species lists 56 amphibian species and 37 reptile species as known to be critically endangered, endangered, or vulnerable.[129] Small, isolated wetlands play especially important roles in amphibian productivity.[130] Amphibian populations thrive when there are a variety of small ecosystems within a regional landscape in which a "dynamic equilibrium" of different populations becomes established.[131] However, if the environment

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[128] Braun, Andrew P., Phelps, Quinton E. "Habitat Use by Five Turtle Species in the Middle Mississippi River." Chelonian Conservation and Biology Jun 2016: Vol. 15, Issue 1, pg(s) 62-68 doi: 10.2744/CCB-1156.1 (available at http://www.bioone.org/doi/abs/10.2744/CCB-1156.1).

[129] IUCN Red List version 2013:2, Table 5: Threatened species in each country (totals by taxonomic group), available at http://cmsdocs.s3.amazonaws.com/summarystats/2013_2_RL_Stats_Table5.pdf (visited on November 24, 2013.)

[130] Gibbons, J. Whitfield, Christopher Winne, et. al. 2006. Remarkable Amphibian Biomass and Abundance in an Isolated Wetland: Implications for Wetland Conservation. Conservation Biology Volume 20, No. 5, 1457–1465.

[131] Mann, W., P. Dorn, and R. Brandl. 1991. Local distribution of amphibians: The importance of habitat fragmentation. Global Ecology and Biogeography Letters 1:36-41.

becomes overly fragmented, as is occurring with river training structures, the dynamic equilibrium is disturbed because patterns of emigration and immigration are disrupted.

211. The Corps could have obtained important information on the amphibians and reptiles that use the Project area, and the Project's likely impacts on those species, had it obtained the Fish and Wildlife Coordination Act Report for the Project that is required by law as summarized in paragraphs 33-40 above and detailed in paragraphs 239-247 below.

13. The FSEIS Fails to Evaluate Impacts to Mammals

212. The FSEIS violates NEPA because it fails to evaluate impacts to mammals. Indeed, the word mammal is not included anywhere in the FSEIS. Bats are discussed only in the Biological Assessment, and impacts to bats in general are not discussed in the FSEIS.

213. Many mammal species are found in the Mississippi River Valley and many of those species utilize riparian areas. Because the Project will affect riparian and wetland areas, the FSEIS should have evaluated impacts to the mammal species found in those areas. However, the FSEIS fails to provide any analysis on the Project's impacts to mammals, despite acknowledging a loss of at least 1100 acres of main channel border habitat and significant past losses of this habitat type, which also provides habitat to mammals.

214. The Corps could have obtained important information on the mammals that use the Project area, and the Project's likely impacts on those species, had it obtained the Fish and Wildlife Coordination Act Report for the Project that is required by law as summarized in paragraphs 33-40 above and detailed in paragraphs 239-247 below.

14. The FSEIS Fails to Evaluate Impacts to Plants

215. The FSEIS violates NEPA because it fails to evaluate the Project's impacts to plants, including wetland plant species, thereby rendering the FSEIS inadequate.

15. The FSEIS Fails to Evaluate Key Information on Climate Change

216. The FSEIS' climate change analysis—and the related analysis of the cumulative impacts of climate change—fail to evaluate whether the impacts of climate change could exacerbate the adverse impacts of the Project, and if so, how and to what extent. Conversely, the

FSEIS fails to assess whether the Project would make the Middle Mississippi River and the species that rely on it less resilient to climate change.

217. Because the FSEIS improperly rejects the comprehensive scientific evidence that demonstrates that river training structures increase flood heights, it fails to address the additive effects of climate change on flood levels. The Middle Mississippi is particularly susceptible to increased extreme weather from climate change. The FSEIS's climate change assessment should have addressed the implications of this susceptibility, but failed to do so.

16. The FSEIS Fails to Adequately Evaluate Cumulative Impacts

218. The FSEIS violates NEPA because it fails to meaningfully evaluate cumulative impacts. The cumulative impacts analysis is critical. It ensures that the Corps will not "treat the identified environmental concern in a vacuum"[132] by requiring consideration of "the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency . . . or person undertakes such other actions."[133]

219. A meaningful assessment of cumulative impacts must identify:

> "(1) the area in which effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other actions – past, present, and proposed, and reasonably foreseeable – that have had or are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate."[134]

220. In conducting the cumulative impacts assessment, the FSEIS must assess whether

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[132] *Grand Canyon Trust v. FAA*, 290 F.3d 339, 346 (D.C. Cir. 2002).
[133] 40 C.F.R. § 1508.7.
[134] *Taxpayers of Michigan Against Casinos v. Norton*, 435 F.3d 852 (D.C. Cir. 2006) (quoting *Grand Canyon Trust*, 290 F.3d at 345); *Fritiofson v. Alexander*, 772 F.2d 1225, 1245 (5th Cir. 1985) (holding this level of detail necessary even at the less detailed review stage of an Environmental Assessment).

the past degradation of the river system combined with the Project will significantly affect the ecological health and functioning of the Middle Mississippi River and its floodplain. "For example, the loss of 50% of historical wetlands within a watershed may indicate that further losses would significantly affect the capacity of the watershed to withstand floods. *It is often the case that when a large proportion of a resource is lost, the system nears collapse as the surviving portion is pressed into service to perform more functions.*"[135]

221. The FSEIS completely fails to satisfy this primary goal of a cumulative impacts analysis. While the cumulative impacts analysis incorporates a number of studies that discuss the significant decline in the ecological health of the Mississippi River due in large part to the construction and operation of the river's navigation system, its textual discussion ignores that information. For example, despite providing an extremely general discussion of the Status and Trends Reports, the FSEIS does not state that those reports documented a significant decline in the health of the river. *See* FSEIS 199-201.

222. Ignoring the well-documented adverse impacts of training structures on ecological diversity and functioning, the FSEIS states that apart from "the adverse effects to shallow to medium-depth, moderate- to high velocity main channel border habitat, [n]o further incremental impacts associated with the Alternatives analyzed, in the context of other past, present, and reasonably foreseeable future actions, are anticipated to rise to a level of significance." FSEIS at 227. This conclusion completely ignores the significant and fundamental changes to the ecological health, form, and function of the Middle Mississippi River caused by past and ongoing Corps activities. It ignores the fact that the number of river training structures in the Middle Mississippi has grown so dramatically that it is now estimated at 1.5 miles of river training structure for each mile of the Middle Mississippi. It ignores the significant body of science that demonstrates that the construction of river training structures has significantly increased flood

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[135] CEQ, *Considering Cumulative Effects Under the National Environmental Policy Act* (January 1997) at 41 (emphasis added).

heights and has fundamentally altered the way the Middle Mississippi River responds to flood events. It ignores the fact that 34.85% of main channel border habitat in the Middle Mississippi River has already been lost, and fails to assess the ecological significance of losing an additional 8.53% of main channel border habitat on top of this already extremely significant loss. In sum, the FSEIS fails to recognize the impacts of the Corps' significant past and present activities carried out under the Regulating Works Program and the Mississippi River and Tributaries Program, and to address those impacts.

223. For these reasons, the FSEIS's cumulative impacts assessment fails to provide a comprehensive, factually accurate, and realistic assessment of the magnitude and significance of the environmental consequences of the Project in the context of the cumulative effects of other past, present, and future actions.

17. The FSEIS Fails to Adequately Evaluate the Risk of Disproportionate Impacts to Low Income and Minority Communities

224. Executive Order 12898 requires that each Federal agency achieve environmental justice by identifying and addressing disproportionately high adverse human health or environmental effects of federal activities on minority and low-income populations. The FSEIS fails to comply with this Executive Order because it (1) fails to assess the potential for disproportionate effects on the health and safety of minority and low income populations from the significant risk of increased flooding created by construction of river training structures, (2) it looks only at county-wide and Census Block Group data to assess the potential for disproportionate impacts and fails to assess the potential for disproportionate impacts to individual communities (towns and small cities) with large minority or low-income populations, and (3) it never addresses foreseeable site-specific impacts, and instead assumes there will be no disproportionate impacts simply because "river training structure construction activities as well as dredging operations are anticipated to occur at locations along the entire length of the Project

Area."[136]

18. The FSEIS Fails to Meaningfully Evaluate Mitigation and Fails to Comply With Federal Mitigation Requirements

225. The FSEIS fails to meaningfully evaluate mitigation, and to comply with federal mitigation requirements. The FSEIS's claim that mitigation for the Project is "discretionary"[137] is incorrect because mitigation is required as a matter of law. The Water Resources Development Act of 2007 requires the Corps to implement mitigation, and comply with mitigation planning requirements, for any project for which the Corps "select[s] a project alternative in any report." 33 U.S.C. § 2283(d). And, NEPA requires that the FSEIS discuss mitigation measures with "sufficient detail to ensure that environmental consequences have been fairly evaluated."[138] A "perfunctory description" of the mitigating measures is not sufficient.[139]

226. "An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective."[140]A bald assertion that mitigation will be successful is not sufficient. The effectiveness must instead be supported by "substantial evidence in the record."[141]

227. The FSEIS violates these mitigation requirements in numerous respects. First, it erroneously claims that the mandatory mitigation requirements of 33 U.S.C. section 2283(d)(1) are not applicable to the FSEIS because "it is not a report being prepared for authorization by Congress." Final SEIS, Appendix H, at H-581. Not so. Section 2283(d) requires the inclusion of a specific mitigation plan in "any report" that selects a project alternative, including the FSEIS. Second, the FSEIS fails to discuss mitigation measures with "sufficient detail to ensure that

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[136] FSEIS at 194.
[137] FSEIS, Appendix C at C-1.
[138] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989).
[139] *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d at 1380.
[140] *South Fork Band Council v. Dept. of Interior*, 588 F.3d 718, 727 (9th Cir. 2009) (internal citations omitted).
[141] *Wyoming Outdoor Council v. U.S. Army Corps of Eng'rs*, 351 F. Supp. 2d 1232, 1252 (D. Wyo. 2005).

environmental consequences have been fairly evaluated," and does not demonstrate that the proposed mitigation will be ecologically successful.[142] To the contrary, it erroneously claims that "no appropriate habitat model(s) currently exists to capture the unique aspects of Middle Mississippi main channel border aquatic habitat" and that the "Corps is attempting to develop a new main channel border habitat model." FSEIS, Appendix C at C-5. Third, the FSEIS does not propose mitigation for all fish and wildlife impacts that are more than negligible, as required by law. Instead, it erroneously claims that impacts must be "significant" before they require mitigation. FSEIS, Appendix C at C-5. Fourth, the FSEIS does not propose any mitigation for the impacts caused by revetment, dredging, and dredged spoil disposal. Fifth, the FSEIS cannot determine the actual amount of mitigation needed because it has not assessed the full extent of the harm to fish and wildlife as a result of the direct, indirect, and cumulative impacts of the Project. Sixth, the FSEIS does not provide a specific plan to mitigate the adverse impacts of the Project that satisfies the requirements discussed above, including the requirement to monitor mitigation efforts until it can be demonstrated that the mitigation has been ecologically successful. Instead it simply provides a list of possible mitigation activities that "may include, but are not limited to, the following: wing dike notching, dike removal, wing dike creation using alternative designs (*e.g.*, rootless dikes), use of rock piles, dredging or material placement of sand, and other possible activities. . . . The ability to design for such habitat, including the associated costs, may need to be carefully considered within the context of the impacts. Impacts will be mitigated to the extent practicable." FSEIS Appendix C at C-5.

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[142] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989).

IX. THE CORPS VIOLATED THE MITIGATION REQUIREMENT OF THE WATER RESOURCES DEVELOPMENT ACT

(Violation of WRDA, 33 U.S.C. § 2283)

(Against all Defendants)

228. Plaintiffs incorporate by reference all preceding and following paragraphs.

229. The Water Resources Development Act, as amended (33 U.S.C. 2283) requires the Corps to mitigate the adverse impacts to ecological resources including fish and wildlife of any water resources project authorized by the Secretary of the Army and for which construction commenced after November 17, 1986, unless the Secretary determines that the project "will have negligible adverse impact on ecological resources and fish and wildlife without the implementation of mitigation measures." 33 U.S.C. §§ 2283(a)(1), 2283(d)(1). After November 17, 1986, the Corps "shall not select a project alternative in any report, unless such report contains (A) a recommendation with a specific plan to mitigate for damages to ecological resources, including terrestrial and aquatic resources, and fish and wildlife losses created by such project, or (B) a determination by the Secretary [of the Army] that such project will have negligible adverse impact on ecological resources and fish and wildlife without the implementation of mitigation measures." 33 U.S.C. § 2283(d)(1).

230. Because the Corps has issued a "report" — the Draft and Final SEISs – on the Project, and the Secretary of the Army has not found that the Project will have only "negligible adverse impact on ecological resources and fish and wildlife without the implementation of mitigation measures," the Corps is required to mitigate the Project's adverse impacts on those "ecological resources and fish and wildlife." *Id.*

231. The Corps' mitigation plans must ensure that "impacts to bottomland hardwood forests are mitigated in-kind and harm to other habitat types are mitigated to not less than in-kind conditions, to the extent possible." 33 U.S.C. § 2283(d)(1). The Corps "shall select and design mitigation projects using a watershed approach to reflect contemporary understanding of the science of mitigating the adverse environmental impacts of water resources projects." 33 U.S.C.

§ 2283(d)(2).

232. Mitigation plans "shall include, at a minimum:"

(i) "a plan for monitoring the implementation and ecological success of each mitigation measure;"

(ii) "the criteria for ecological success by which the mitigation will be evaluated and determined to be successful based on replacement of lost functions and values of the habitat, including hydrologic and vegetative characteristics;"

(iii) "for projects where mitigation will be carried out by the Secretary . . . a description of the land and interest in land to be acquired for the mitigation plan; [and] the basis for a determination that the land and interests are available for acquisition . . . ;"

(iv) "for projects where mitigation will be carried out through a third party mitigation arrangement . . . a description of the third party mitigation instrument to be used; and [] the basis for a determination that the mitigation instrument can meet the mitigation requirements for the project;"

(v) "a description of . . . the types and amount of restoration activities to be conducted; [] the physical action to be undertaken to achieve the mitigation objectives within the watershed in which such losses occur . . . ; and [] the functions and values that will result from the mitigation plan; and

(vi) "a contingency plan for taking corrective actions in cases in which monitoring demonstrates that mitigation measures are not achieving ecological success in accordance with the criteria under clause (ii)."

33 U.S.C. § 2283(d)(3)(B).

233. The Corps' mitigation plans must also comply with "the mitigation standards and

policies established pursuant to the regulatory programs administered" by the Corps. 33 U.S.C. § 2283(d)(3)(A).

234. The Corps is also required to consult yearly on each project with the appropriate Federal agencies and the states on the status of the mitigation efforts. 33 U.S.C. § 2283(d)(4)(B). The consultation must address the status of ecological success on the date of the consultation, the likelihood that the ecological success criteria will be met, the projected timeline for achieving that success, and any recommendations for improving the likelihood of success. *Id*.

235. In addition, mitigation lands for Corps civil works projects must be purchased before any construction begins. 33 U.S.C. § 2283(a)(1). Any physical construction required for purposes of mitigation should also be undertaken prior to project construction but must, at the latest, be undertaken "concurrently with the physical construction of such project." *Id*.

236. Because, as noted, the Corps has issued a "report" on the Project – the Draft and Final SEISs -- the Water Resources Development Act requires the Corps to mitigate the adverse impacts of the Project,[143] including all losses to fish and wildlife, unless the Secretary of the Army determines that the adverse impacts to fish and wildlife would be "negligible." 33 U.S.C. § 2283(d)(1). To ensure this happens, the Corps is prohibited from selecting a "project alternative in any report" unless that report includes a "specific plan to mitigate fish and wildlife losses." *Id*. Accordingly, the FSEIS must include a specific mitigation plan. It does not.

237. The FSEIS asserts, incorrectly, that the Corps need not carry out the foregoing required mitigation of the Project's impacts on ecological resources including fish and wildlife if funds are not available through the Regulating Works Project. FSEIS, Appendix C at C-8. Not

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[143] As noted above, the Water Resources Development Act requires the Corps to implement mitigation, and comply with mitigation planning requirements, for any project for which the Corps "select[s] a project alternative in any report." 33 U.S.C. § 2283(d). Thus, mitigation was required for the Project as a matter of law upon issuance of the Draft SEIS, and mitigation is required as a matter of law for components of the Regulating Works Project that are proceeding under environmental assessments, which are likewise "reports" triggering this mitigation requirement.

so. As discussed, mitigation is required as a matter of law for the Project. Additionally, mitigation is already required as a matter of law for any elements of the Project being carried out pursuant to "any report" where a project alternative was selected.[144] The Corps must mitigate the adverse impacts of the Project, and the cost of carrying out that mitigation is a Project cost.

229. Because the Corps has failed to comply with these mitigation requirements, it has violated the Water Resources Development Act.

X. THE CORPS VIOLATED THE FISH AND WILDLIFE COORDINATION ACT.

(Violation of FWCA, 16 U.S.C. § 661 et seq.)

(Against all Defendants)

238. Plaintiffs incorporate by reference all preceding and following paragraphs.

239. The Fish and Wildlife Coordination Act, 16 U.S.C. section 661 et seq. ("FWCA"), applies to all water resources projects and requires the Corps to consult with the U.S. Fish and Wildlife Service before approving and implementing such projects. As noted, it requires that "wildlife conservation shall receive equal consideration and be coordinated with other features of water-resource development programs." 16 U.S.C. § 661. Under the FWCA, the Corps must obtain a Fish and Wildlife Coordination Act Report for the Project and its FSEIS.

240. The Corps asserts in its FSEIS that the Regulating Works Project is exempt from the Fish and Wildlife Coordination Act because "60 percent or more of the estimated construction cost has been obligated for expenditure," presumably as of 2016. FSEIS at 197. Not so. The Fish and Wildlife Coordination Act cost exemption must be measured as of 1958, when the Fish and Wildlife Coordination Act was signed into law. The U.S. Fish and Wildlife Service's Fish and Wildlife Coordination Act Handbook states:

"The only class of projects exempted from the provisions of Section 2 of the FWCA, then,

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[144] 33 U.S.C. § 2283(d).

are those on which project construction was 60 percent or more completed (based on obligation of estimated construction costs) on August 12, 1958. Projects that are later modified or supplemented thus fall under the provisions of Section 2 of the FWCA, even if the original project modified or supplemented was more than 60 percent constructed at the time of enactment of the FWCA." [145]

241. The FSEIS fails to provide any information or supporting evidence that this spending requirement was met in 1958. In fact, the FSEIS does not provide any information on either historic or anticipated spending for the Regulating Works Project, or on the original authorized total Project cost or the currently projected total Project cost. Moreover, since the Corps appears to interpret the Regulating Works Project as a perpetual authority, it would be impossible to determine a final spending amount and therefore impossible to determine when 60 percent of that amount has been spent.

242. The FSEIS' claim that this cost exemption is to be determined as of 2016 is inconsistent with previous Corps decisions. In 1984, the Corps' Chief of Engineers stated that for an ongoing project, the Fish and Wildlife Coordination Act cost exemption must be measured as of the date of enactment of the Fish and Wildlife Coordination Act (August 12, 1958): "The Fish and Wildlife Coordination Act (FWCA) of 1958 is applicable to any project where less than 60 percent of the estimated construction cost had been obligated as of 12 August 1958, the date of enactment."[146]

243. The Corps reached the same conclusion in 1980:

"The 1912 project, as amended, has been determined to have been less than 60 percent

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[145] U.S. Fish and Wildlife Service, Water Resources Development Under the Fish and Wildlife Coordination Act (November 2004) at I-38 (https://www.fws.gov/ecological-services/es-library/pdfs/fwca.pdf, visited January 17, 2017).

[146] April 24, 1984 Letter from the USACE Chief of Engineers to the Secretary of the Army at page 4, included with the Missouri River Bank Stabilization and Navigation Project Final Feasibility Report and Final EIS for the May 1981 Fish and Wildlife Mitigation Plan (file:///C:/Users/sametm/Downloads/MO%20River%20BSNP%20Feas%20%20Mit%201981.pdf, visited January 17, 2017).

complete as of 12 August 1958 and is eligible under the Coordination Act."[147]

244. In 2011, the Government Accountability Office reached the same conclusion as well. It stated that the Fish and Wildlife Coordination Act applies to the Regulating Works Project:

> "The Corps' authority to use river training structures in the Mississippi River comes from several Rivers and Harbors Acts, which collectively require the Corps to maintain a 9-foot navigation channel in the river, and several Water Resources Development Acts, which also authorize projects in the Corps' civil works program. In using these structures, the Corps must comply with federal environmental laws such as the National Environmental Policy Act (NEPA), the Clean Water Act (CWA), and the Fish and Wildlife Coordination Act, as well as applicable state requirements."[148]

245. The Corps did not object to, or otherwise disagree with, this finding.

246. The scope of the Project, the significance of its adverse impacts, and the importance of the Mississippi River to fish and wildlife conservation, clearly warrant preparation and full consideration of a Fish and Wildlife Coordination Act report.

247. Because the Corps failed to obtain the required Fish and Wildlife Coordination Act report from the U.S. Fish and Wildlife Service before approving the Project, the Corps' approval of the Project violates the Act and should be set aside.

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[147] February 19, 1980 letter from Col. Walker C. Bell, USACE District Engineer, Kansas City District to Tom Saunders, Area Manager, U.S. Fish and Wildlife Service.

[148] Government Accountability Office, Mississippi River: Actions Are Needed to Help Resolve Environmental and Flooding Concerns about the Use of River Training Structures, GAO-12-41 (December 2011), at Summary Page, 16, 20.

XI. THE CORPS VIOLATED THE SCOPE OF THE PROJECT'S AUTHORIZATION BY THE 1927 RIVERS AND HARBORS ACT

(Violation of 1927 R&H Act)

(Against all Defendants)

248. Plaintiffs incorporate by reference all preceding and following paragraphs.

249. The Project vastly exceeds the scope of the Regulating Works Project authorized by Congress. The parameters of the Regulating Works Project are established by the 1926 Chief of Engineers' Report[149] that was authorized by the Rivers and Harbors Act of 1927. Those parameters establish explicit limitations, including:

(1) Constriction of the channel through regulating works and revetment is limited to a conservative width of 2,500 to 2,000 feet at low water, as follows: 2,250 foot contraction at low water from River des Peres to Grays Point, 2,500 foot contraction at low water from Commerce to Commercial Point, and 2,000 foot contraction at low water from Commercial Point to Ohio River;[150] and

(2) "That after completion of regulating works, dredging be continued, as needed, to maintain a channel 9 feet deep and 300 feet wide with requisite increased width at bends: *Provided*, That dredging of channels deeper than 8 feet and wider than 200 feet be authorized only when the needs of navigation then existing are not adequately met by such 8-foot channel."[151]

250. The Chief's Report expressly rejected more aggressive contractions of the river: "The contraction to be brought about by the regulating works proposed is a conservative one. The practical result of these works will be merely narrowing

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[149] Rivers and Harbors Act of 1927 (ch. 47, 44 Stat. 1010); 1926 Chief's Report at paragraphs 55-57, 80, 84).

[150] 1926 Chief's Report. As noted above, the contraction width is measured from the riverside toe of a river training structure on one side of the river to the bank or riverside toe of another river training structure on the opposite side of the river.

[151] *Id.*

> the abnormally wide sections of the river to the present mean widths. The project of 1881 contemplated contraction to a width of about 2,500 feet. Through St. Louis Harbor a contraction to a low-water width of 1,500 feet to 1,800 feet has been carried out. The contraction proposed causes much less change in the original condition of the river than either the project of 1881 or the work in St. Louis Harbor. *Calling for very little change from the original condition of the river the equilibrium of natural forces in the river will be but slightly disturbed.*"[152]

251. As a result, Congress established very specific limits on the Regulating Works Project—once the river was contracted to a width of 2,000 to 2,500 feet (depending on location), the Corps was to maintain the navigation channel only through dredging as needed. Congress also explicitly rejected more aggressive contraction plans.

252. Despite Congress's rejection of both 1,800-foot and 1,500-foot contraction plans in the 1927 Rivers and Harbors Act, since 1934 the Corps has frequently deviated from Congress' direction by implementing a damaging contraction of 1,800 feet,[153] and since 1974, the even more damaging contraction of 1,500 feet, without obtaining Congressional authorization.[154] The Corps has advised Plaintiffs that, as of June 7, 2017, the agency has been unable to identify any specific congressional authorization for these two more damaging contraction plans, nor for the similar

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[152] 1926 Chief's Report at paragraph 57 (emphasis added).

[153] In 1965, the Corps also determined that it was required to maintain the navigation channel year round.

[154] While Congress can ratify an otherwise unauthorized agency action through appropriations acts, the "appropriation must plainly show a purpose to bestow the *precise* authority which is claimed." *Schism v. United States*, 316 F.3d, at 1289; *Fund for Animals v. United States Bureau of Land Management*, 460 F.3d at 19 n. 7. In other words the appropriations act must "clearly identify[] the action to be ratified." *Id*.. Thus, to ratify the alternate contraction plans, Congress would have had to have been formally informed of the change in the plan, and would have had to clearly state in an appropriations act that it was approving the alternate plan. Plaintiffs are not aware of any such notification to Congress or any such Congressional approval.

contraction called for by the Project.[155]

253. The Corps' unauthorized implementation of a 1,500 foot contraction has resulted in significant additional environmental harm and flood stage increases than would have occurred under the much wider contraction plan authorized by Congress.

254. The Project vastly exceeds the explicit limits of the 1927 authorization by: (1) utilizing a 1,500 contraction plan; (2) building river training structures to achieve the unauthorized 1,500 foot contraction plan; and (3) building river training structures to reduce dredging costs associated with maintaining the navigation channel even where both the authorized (2,000 to 2,500 foot) and unauthorized (1,500 foot) contraction widths have been achieved.

255. Both the FSEIS and DSEIS helped drive development of the unauthorized Preferred Alternative which became the Project by establishing an improper project purpose that could only be satisfied through continued construction of river training structures regardless of the degree of contraction of the river:

> The long-term goal of the Project, as authorized by Congress, is to obtain and maintain a navigation channel and *reduce federal expenditures by alleviating the amount of annual maintenance dredging through the construction of regulating works.*

FSEIS at ES-1; DSEIS at ES-1 (emphasis added).

256. Because the Project exceeds the explicit limits of its authorization by Congress in the 1927 Rivers and Harbors Act, the Corps' approval of the Project violates the Act and should be set aside.

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[155] Email to Melissa Samet, Senior Water Resources Counsel, National Wildlife Federation, from Keli N. Broadstock, Assistant District Counsel, Army Corps of Engineers St. Louis District, dated June 7, 2017.

XII. PRAYER FOR RELIEF

Plaintiffs respectfully request that this Court:

1. Adjudge and declare that Defendants' approval of the ROD and its FSEIS in 2017 was capricious, an abuse of discretion, and not in accordance with law in that (1) the FSEIS violates the National Environmental Policy Act ("NEPA"), (2) the approval violates the mitigation requirements of the Water Resources Development Act ("WRDA"), (3) the Corps failed to comply with the Fish and Wildlife Coordination Act ("FWCA"), and (4) the Project exceeds the scope of the authority granted to the Corps by the Rivers and Harbors Act of 1927;
2. Order Defendants to comply with NEPA by preparing an adequate SEIS for the Project;
3. Order Defendants to comply with the mitigation requirements of the WRDA;
4. Order Defendants to comply with the FWCA;
5. Order Defendants to comply with the 1927 Rivers and Harbors Act;
6. Enjoin construction of new river training structures until Defendants have complied with NEPA, the WRDA, the FWCA, and the 1927 Rivers and Harbors Act;
7. Award Plaintiffs their reasonable attorneys' fees and costs and expenses incurred in connection with the litigation of this action under the Equal Access to Justice Act ("EAJA") and other applicable law; and

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8. Award any other relief that this Court deems just and proper.

Dated: May 13, 2020

Respectfully submitted,

s/ *Stephan C. Volker*
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